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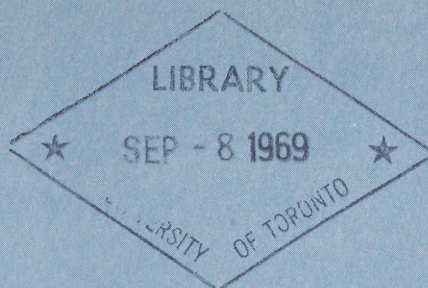
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DEPARTMENT OF ENERGY, MINES AND RESOURCES  
Ottawa

# GRAND BANKS to THE AZORES and SCOTIAN SHELF

April 12 to May 5, 1966

No. 2

1969 Data Record Series

## Canadian Oceanographic Data Centre

Programmed by the  
Canadian Committee on Oceanography

1969



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1969



# **GRAND BANKS to THE AZORES and SCOTIAN SHELF**

**April 12 to May 5, 1966**

**CODC Reference: 10-66-002**

**No. 2**

**1969 Data Record Series**

**DEPARTMENT OF ENERGY, MINES AND RESOURCES**

**Canadian Oceanographic Data Centre**

**615 Booth St., Ottawa, Canada**

**Programmed by the Canadian Committee on Oceanography**





DEPARTMENT OF ENERGY, MINES AND RESOURCES

MARINE SCIENCES BRANCH

GRAND BANKS to THE AZORES  
and  
SCOTIAN SHELF

Ship:	CSS "Baffin"
Local cruise designation:	BIO 0566
CODC cruise reference no:	10-66-002
Cruise period:	April 12 - May 5, 1966
Scientist-in-Charge:	C.R. Mann
Observers:	G.T. Needler C.D. Maunsell T.R. Foote M.E. MacLean

ATLANTIC OCEANOGRAPHIC LABORATORY  
BEDFORD INSTITUTE, Dartmouth, N.S.





## SECTION I

Description of data collection procedures .





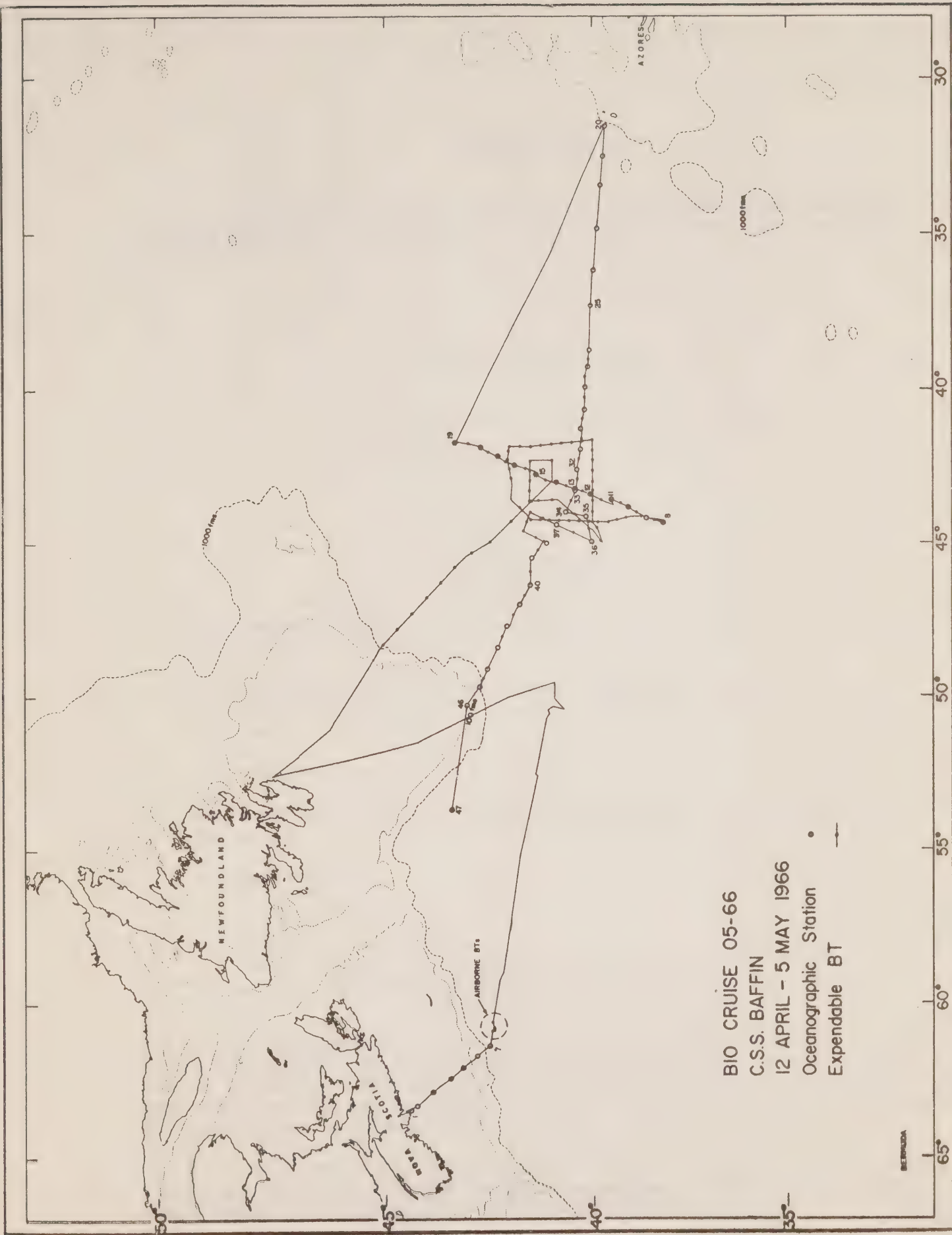


"BAFFIN"

Canadian Hydrographic Service







BIO CRUISE 05-66  
 C.S.S. BAFFIN  
 12 APRIL - 5 MAY 1966  
 Oceanographic Station •  
 Expendable BT —





INTRODUCTION

The object of this cruise was to collect oceanographic data for further studies of ocean circulation in the area from the Grand Banks to the Azores and Scotian Shelf.

EXTRACT OF CRUISE LOG

Depart Halifax, N.S.	12 April, 1966
Return Halifax, N.S.	5 May, 1966

OBSERVATIONS TAKEN

1. 7 oceanographic stations on the Scotian Shelf at which temperature and salinity were observed.
2. 40 oceanographic stations between the Grand Banks and the Azores at which temperature, salinity, dissolved oxygen and silicate were observed.
3. 2905 miles of echo soundings.
4. 104 Expendable BTs. At station positions and at a grid southeast of the Banks.
5. 47 Mechanical BTs.

OBSERVATIONAL AND LABORATORY PROCEDURES

Oceanographic data were collected using Knudsen reversing bottles fitted with Richter and Weise reversing thermometers. All stations were made to the bottom. Vertical profiles of temperature were obtained with mechanical and expendable bathythermographs made by the Sippican Corporation. These gave profiles to 450 metres.

Dissolved oxygen was determined on ship using the modified Winkler method and silicates using the Grasshoff technique. Salinities were determined ashore in the laboratory with NIO salinometer No. 14.

On leaving Halifax seven stations comprising the Halifax section were run. The ship then carried out a short exercise with the Royal Canadian Air Force to test airborne bathythermographs. These were dropped from the aircraft near the position of the ship, which then took a mechanical bathythermograph for comparison.

The ship then proceeded to the southeast of the Grand Banks and a network of observations in the form of boxes was made with expendable bathythermographs (see track chart). A line of stations was then run north-south, and another line of stations from the Azores to the Grand Banks.

#### PERSONNEL

##### At Sea

C.R. Mann	Scientist-in-Charge
G.T. Needler	
M.E. MacLean	
W.G. Warshick	
F.J. Barteaux	
T.R. Foote	
C.D. Maunsell	
E.A. Lewis	
A.R. Coote	
K.T. White	

##### Data Analyses

Compilation of data:	R.F. Reiniger
	C.K. Ross
	A.B. Grant
	J.E. Gavan
Chemical determinations:	M.E. MacLean
	A.R. Coote
	W. Young



## SECTION II

Description of the machine-generated data record





## INTRODUCTION

This section applies to the machine processing phase of the data reduction and computation.

The oceanographic data previously recorded on CODC data summary forms, a sample of which is shown on the next page, are transferred to punch-cards for subsequent electronic data processing on an IBM 1620 computer, using CODC's OCEANS II program. In addition to computing routine derived quantities, the program carries out unit and format conversions, range checks, plausibility tests, internal editing, and if required, interpolation at standard oceanographic depths. When interpolations are carried out, additional derived values are computed.

After the data have been processed, the data record is prepared using an IBM 1401 computer configuration with the OCEAN REPORT III program, which provides for pre-edited high speed print-out on continuous direct-image masters. These masters subsequently yield the required volume of copies for distribution.

Provision has been made to enter an "estimate of precision" for each observed variable selected for interpolation at standard oceanographic depths. The precision depends on the instrument and/or technique used to determine the variable. A standard precision stated as a **standard deviation** ( $\sigma$ ) can be determined for each instrument or technique under routine field conditions by making duplicate determinations of the variables for a homogeneous sample of sea water. These standard deviations are given for each cruise under "GENERAL INFORMATION" in section III of the data record.

The **measurement error estimate** of a specific observation in this data record, is stated as a multiple of the standard deviation derived as above, and entered in a column immediately to the right of the reported variable. In order to distinguish it from an additional decimal digit, the measurement error estimate is recorded alphabetically, (i.e.,  $1\sigma = A$ ,  $2\sigma = B$ , etc.; in this data record "A" is suppressed).

An option is provided with respect to the measurement of the salinity variable. If observed to three decimal digits, the last digit takes the place of the measurement error estimate.

In the past, a number of methods for both manual and machine interpolation have been developed. Studies and comparisons of the several methods have shown that no single method is universally acceptable. The manual methods are the most elaborate and flexible, but often require subjective decisions. In machine interpolation, all the present methods fail to yield acceptable results under some circumstances. Hence, it is considered necessary to qualify interpolated values by stating an "**interpolation error estimate**" derived from the particular interpolation formula used. There are two purposes in stating the error estimates; **first**, to give an indication of the quality of the interpolated data; **second**, to allow the oceanographer to redesign his observational procedures in order to reduce interpolation errors in future observations.

The interpolation scheme chosen for the OCEANS II program consists of a combination of two 3-point interpolations using the Lagrangian interpolation polynomial, as recommended by Rattray (1962). A parabola is fitted through three values of a given variable (T, S,  $O_2$ ) considered as a function of depth. The two interpolation parabolas require a total of four points (observed depths). The middle points are common to both parabolas. The average of the two values obtained from the parabolas at standard depth is taken as the interpolated value, and a function of their difference as an estimate of the interpolation error.

This function combined with the "**measurement error estimate**" comprises the "**combined measurement and interpolation error estimate**". It is expressed as a multiple of the standard deviation of measurement ( $\sigma$ ) under normal routine field conditions by:

## CANADIAN OCEANOGRAPHIC DATA CENTRE

1 IDENT. CODE		2 LATITUDE (N=+)		3 LONGITUDE (W=+)		5 DATE		6 TIME		7 DEPTH		9 NO. DEPTHS OBS'D.		VESSEL																														
COUNTRY INST.		DEG. MIN. 1/10		DEG. MIN. 1/10		YEAR MONTH DAY		HOURS G.M.T. 1/10		— TO BOTTOM				ENTERED BY																														
1 8																																												
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																					
10 WATER		11 WAVES I		12 WAVES II		13 WIND		14 BAROMETER		15 AIR TEMP.		16 WET BULB		17 W.W. CODE		18 CLOUD		19 HOURS AFTER H.W.		UNASSIGNED		CONSEC. NUMBER		1																				
COLOUR TRANS.		Dw Dw Pw Hw		Dw Dw Pw Hw		DIR. <del>—</del> SPEED				1/10		1/10 (SEPT. 62)												1																				
36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
6 TIME		7 DEPTH OF SAMPLE		8 TEMPERATURE		9 SALINITY		10 OXYGEN		13 PO - P		14 TOTAL - P		15 NO <sub>2</sub> - N		16 NO <sub>3</sub> - N		17 SiO <sub>3</sub> - Si		18 P.H.				3																				
HOURS G.M.T. 1/10		e		↑		↓		e		↓		↓		↓		↓		↓		↓				3																				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																					
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1	2	3	4	5	6	7	8	9	10	11	12																																	

$$\frac{\sigma_i}{\sigma} = \left\{ \frac{(\Delta V_i)^2}{\sigma^2} + \sum_{n=j-2}^{j+1} (\gamma_n)^2 \left( \frac{\sigma_n}{\sigma} \right)^2 \right\}^{1/2}, \text{ where}$$

$\sigma$  = Standard deviation of the combined error estimates at standard oceanographic depth,

$\Delta V_i$  = the interpolation error estimate of variable "V" at standard oceanographic depth =  $^{1/3} (\bar{V}_{i_1} - V_{i_2})$

$\gamma$  = Interpolation polynomial coefficient.

$Z_j$  = Observed depth.

$Z_i$  = Standard oceanographic depth, such that:  $Z_{j-2} < Z_{j-1} < Z_i < Z_j < Z_{j+1}$

The integral part of the fraction  $\frac{\sigma_i}{\sigma}$ , if  $\geq 2$ , is reported in this Data Record following the interpolated variable. It represents the **combined measurement and interpolation error estimate**. In order to distinguish it from an additional decimal digit, it is recorded alphabetically (e.g.: 2 as "B", 3 as "C", etc.).

With respect to the interpolated value of the salinity variable if reported to three decimal digits, the **interpolation error estimate** is given only when  $\frac{\sigma_i}{\sigma} \geq 2$  (the salinity is then recorded to two decimal places). If less than 2, the mean obtained from the two interpolation parabolas is reported to three decimal places.



## EXPLANATION OF DATA RECORD HEADINGS

### MASTER HEADINGS

(1) C-REF-NO	(6) YR	(11) DEPTH	(16) WAVES 1	(21) AIR T	(26) VIS
(2) CONS. NO	(7) MONTH	(12) MXSAMPD	(17) WAVES 2	(22) WET B	(27) STN
(3) LAT	(8) DAY	(13) NO. DPTH	(18) WND-DIR	(23) ww-CODE	
(4) LON	(9) HR	(14) W-COLOR	(19) WND-FCE	(24) CLD-TPE	
(5) MARSD SQ	(10) C/I	(15) W-TRNSP	(20) BARO	(25) CLD-AMT	(28) HW

(1) CRUISE REFERENCE NUMBER:

Assigned by the Institute. Commences with 001 at the beginning of each year (effective Jan. 1, 1963). Prior to that date the CRN was a number designated by CODC.

(2) CONSECUTIVE NUMBER:

Indicates the chronological order in which the stations were occupied.

(3) LATITUDE:

Indicate the position of the platform at the time of observation.

(4) LONGITUDE:

(5) MARSDEN SQUARE: Designates the geographic area code of the observation (see Marsden square chart).

(6) YEAR:

(7) MONTH:

(8) DAY:

(9) HOUR:

The time (Greenwich Mean Time) at which the surface environmental data were recorded. It is reported to tenths of hours (Table 1).  
If an "X" precedes the value for HOUR, (prior to Jan. 1, 1963) it indicates that the reported time is doubtful.

(10) COUNTRY/  
INSTITUTE:

The International Geophysical Year (IGY) Country Code/Institute Code - see Table 11.

(11) DEPTH:

The sounding reported in metres. If corrected, this is stated in the "GENERAL INFORMATION" chapter of section III. Charted depths are preceded by the letter "C".

(12) MAXIMUM

SAMPLING DEPTH: A code to indicate the deepest sampling depth (used for high speed sorting).

00 m - 50 m = 00  
51 m - 150 m = 01  
151 m - 250 m = 02  
etc.

- (13) NUMBER OF DEPTHS: The number of levels observed (this is entered to initiate a computer safety check, guarding against the loss of punch-cards).
- (14) WATER COLOUR: A code based on the percentage of yellow (see table 2 and Note under FIELD "15" below).
- (15) WATER TRANSPARENCY: The depth in metres at which a Secchi disc (white disc, 30 cm. in diameter) just disappears from view, or the optical density expressed in percentage;
- NOTE: The "GENERAL INFORMATION" chapter in section III of the data record will state which method was used.
- (16) WAVES 1  
( $d_w d_w P_w H_w$ -code): The direction, period and height of the **wind-propagated** wave system. (See Tables 3, 4 and 5). Ref: World Meteorological Organization Codes 0885, 3155, 1555.
- (17) WAVES 2  
( $d_w d_w P_w H_w$ -code): The direction, period and height of the predominant **non-wind-propagated** wave system. (See Tables 3, 4 and 5). Ref: World Meteorological Organization Codes 0885, 3155, 1555.
- (18) WIND DIRECTION: The true direction to the nearest 10 degrees from which the wind is blowing (wind direction 990 means:—wind variable or direction unknown).
- (19) WIND FORCE (WND-FCE): Beaufort notation (See Table 6).
- WIND SPEED (WND-SPD): Anemometer reading reported in metres per second. Instrument height reported in "GENERAL INFORMATION" chapter of section III.
- (20) BAROMETER: The barometric pressure reported in millibars: the "GENERAL INFORMATION" chapter in Section III of the data record will state the type of instrument used.
- (21) AIR TEMPERATURE: In degrees Celsius.
- (22) WET BULB: In degrees Celsius.
- (23) ww CODE: Present Weather Code (See Table 7). Ref: WMO Code 4677
- (24) CLOUD TYPE: The type of predominating clouds (See Table 8). Ref: WMO Code 0500.
- (25) CLOUD AMOUNT: The sky coverage in eighths (See Table 9) Ref: WMO Code 2700
- (26) VISIBILITY: Visibility at the surface (See Table 10). Ref: WMO Code 4300.
- (27) STATION: A station reference number, assigned by the institute prior to, or during the survey.
- (28) HOURS AFTER HIGH WATER: Indicates the state of the tide for nearshore observations.

## OBSERVED DATA HEADINGS

(1) GMT	(2) DEPTH	(3) TEMP	(4) SAL	(5) OXYGEN	(6) SGMT
(7) SOUND	(8) PO <sub>4</sub>	(9) -P-	(10) NO <sub>2</sub>	(11) NO <sub>3</sub>	(12) SiO <sub>3</sub>
				(12) SiO <sub>3</sub>	(13) pH.

NOTE: Headings (1) to (7) will always be present. Headings (8) to (13) appear only when one or more additional chemical entries were made.

(1) G.M.T.: The Greenwich Mean Time of (in-situ) thermometer inversion and sea water sample collection.

When a multiple cast was initiated prior to and continued after midnight, the times indicated are uninterrupted by the change of day and appear beyond 24.0 hours. This will be accompanied by a statement: "MULTIPLE CAST CONTINUED NEXT DAY", which is printed following the last level of observed values.

(2) DEPTH: The depth in metres at the reversal time of deepest cast.

(3) TEMPERATURE: Temperatures from deepsea reversing thermometers, read to 0.01° C. Surface temperature measurement procedures are described in the chapter "OBSERVATION PROCEDURES" of section I, and/or the "GENERAL INFORMATION" chapter of section III. An alphabetical character following the temperature value represents the measurement error estimate referred to in the INTRODUCTION to this section.

(4) SALINITY: Salinity as defined by:  $S = 0.03 + 1.805 C1\%$ , reported in:  
 a. 1/100 parts per 1000, or  
 b. 1/1000 parts per 1000.

In case a: an alphabetical character following the value is the measurement error estimate as referred to under (3).

In case b: no error estimate indication is provided for, but an additional decimal digit takes its place.

(5) OXYGEN: The concentration of dissolved oxygen expressed in millilitres per litre to 2 decimal places. An alphabetical character following the value is the measurement error estimate as referred to under (3).

(6) SIGMA-T: The specific gravity anomaly as defined by:  $(\text{Specific gravity} - 1) \times 10^3$  (e.g.,  $\sigma_t$  reported as 2456, reads 24.56, and corresponds to a specific gravity of 1.02456).

(7) SOUND: The sound velocity is reported in m/sec. to 1 decimal place (e.g., 1437.9 m/sec.). The computation is carried out using Wilson's formula (1960), expressed in terms of temperature, salinity and total pressure.



(8) PO <sub>4</sub>	Phosphate-Phosphorus reported to hundredths of microgram-atoms per litre.
(9) -P-	Total Phosphorus reported to hundredths of microgram-atoms per litre.
(10) NO <sub>2</sub>	Nitrite-Nitrogen reported to hundredths of microgram-atoms per litre — No dissolved nitrogen included —
(11) NO <sub>3</sub>	Nitrate-Nitrogen reported to tenths of microgram-atoms per litre.
(12) SiO <sub>4</sub>	Silicate-Silicon reported to tenths of microgram-atoms per litre.
(13) pH	The pH value.

NOTE: "TRC" (trace) is reported when a chemical entry has a value less than the standard deviation of measurement for that particular variable.

#### INTERPOLATED DATA HEADINGS

(1) DEPTH	(2) TEMP	(3) SAL	(4) OXYGEN	(5) SGMT	(6) SOUND
(7) DELTA-D	(8) POT-EN	(9) SVA.			

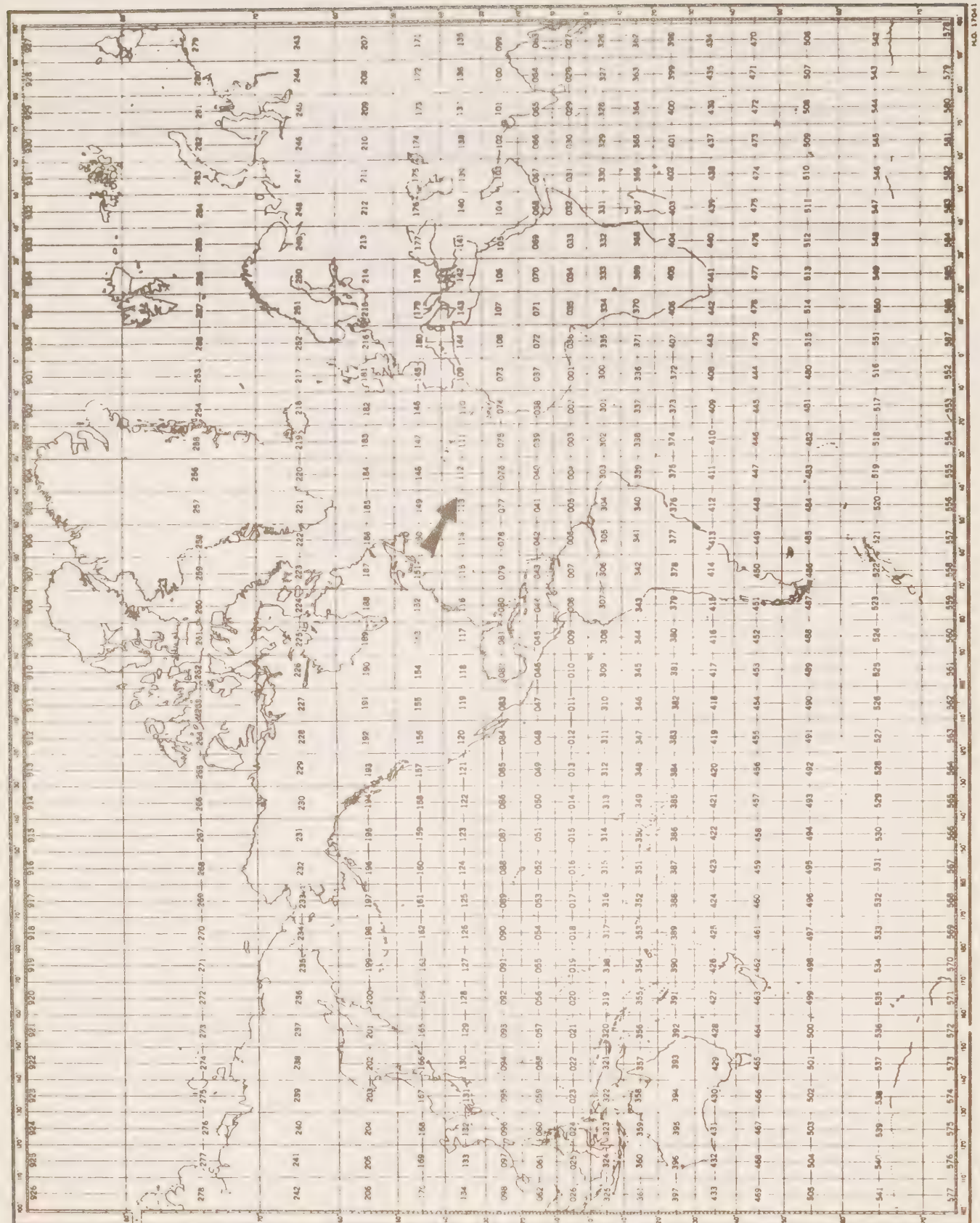
- (1) DEPTH: Standard Oceanographic Depth in whole metres, as well as additional depths: 125, 175, 225, 3500, 4500, 5500, 6500, 7500, 8500, 9500.
- (2) TEMPERATURE: Interpolated value at standard depth, followed by the **combined measurement and interpolation error estimate** (see "INTRODUCTION" to section II of the data record).
- (3) SALINITY:
- A. The reported salinity values are measured to three decimal places.
    - (i) the interpolation error estimate is less than twice the standard deviation of measurement
      - the interpolated value is reported to three decimal places (e.g., 30.139).
    - (ii) the interpolation error estimate is equal to or greater than twice the standard deviation of measurement.
      - the interpolated value is reported to two decimal places, and followed by the **interpolation error estimate** (e.g., 29.23 C).
  - B. The reported salinity values are measured to two decimal places and followed by the measurement error estimate.
    - the interpolated value is reported to two decimal places, and followed by the **combined measurement and interpolation error estimate** (e.g., 30.59 B).
- (4) OXYGEN: Interpolated value at standard depth, followed by the **combined measurement and interpolation error estimate** (see "Introduction" to section II of the data record).

- (5) SIGMA-T: Computed from temperature and salinity values at standard oceanographic depth.
- (6) SOUND VELOCITY: Computed from temperature, salinity and total pressure values at standard oceanographic depth, using Wilson's formula (1960).
- (7) DELTA-D: The geo-potential anomaly as defined by:
- $$\Delta D = \int_0^p \delta dp$$
- $\Delta D$  is expressed in dynamic metres ( $10^5$  ergs/gram) and recorded to three decimal places (e.g., 2.345 dyn. metres).
- (8) POTENTIAL ENERGY ANOMALY: The Potential energy anomaly  $\chi$  as defined by:
- $$\chi = 1/g \int_0^p p \delta dp = \int_0^z \rho p \delta dz$$
- $\chi$  is expressed in units of  $10^8$  ergs/cm<sup>2</sup> and recorded to two decimal places (e.g., 116.44).
- (9) SPECIFIC VOLUME ANOMALY: The specific volume anomaly as defined by:
- $$\delta = \alpha - \alpha_{35.0.p}$$
- $\delta$  is expressed in ml/gr, and conventionally reported as  $10^5 \delta$ , to one decimal place (i.e.,  $\delta$  reported as 1234, reads 123.4, and corresponds to a specific volume anomaly of 0.001234 ml/gr.).

## SPECIAL CHARACTERS

‡ (Record mark): is used to indicate inconsistencies which are printed in an area below the "Observed Data". A corresponding record mark at the extreme left hand side indicates the level at which the inconsistency occurs

\* (Asterisk): this character may occur in the interpolated portion of the data record. It is printed at the extreme left hand side of the page, when three or more standard depth levels fall within any one observed depth interval. The third, and all consequent levels are preceded by the asterisk to indicate that more than two machine interpolations were carried out, utilizing the same set of interpolation parabolas. The asterisk will also appear when the last standard depth is an extrapolation and there are at least two interpolations between the last two observed depths.





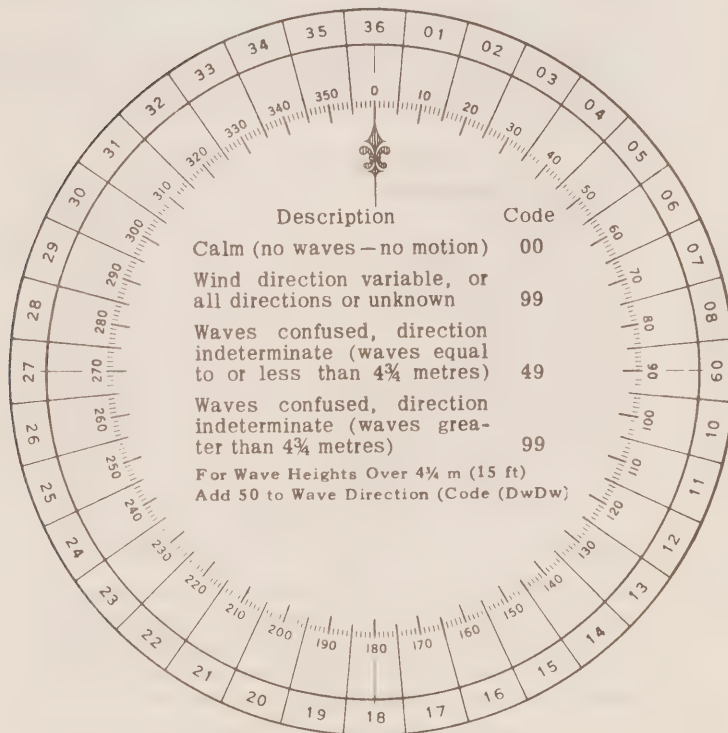
**Table 1**  
**CONVERSION**  
**MINUTES TO  $\frac{1}{10}$  HRS.**

Minutes	Tenths Hrs.
00-03	0
04-08	1
09-15	2
16-20	3
21-27	4
28-32	5
33-39	6
40-44	7
45-51	8
52-56	9
57-59	0 (next HR.)

**Table 2**  
**WATER COLOR CODE**  
**Based on Percentage Yellow**

Code:	Description
00	Deep Blue
10	Blue
20	Greenish Blue
30	Bluish Green
40	Green
50	Light Green
60	Yellowish Green
70	Yellow Green
80	Green Yellow
90	Greenish Yellow
99	Yellow

**Table 3. DIRECTION CODE (dd)**



**NOTE:**

Always use the true direction from which the wind is blowing, or the direction from which Waves I (sea), or Waves II (swell) come.

**Table 4. PERIOD OF THE WAVES (P<sub>w</sub>)**  
(Measure to the Nearest Second)

Code:	Period in Seconds:	Code:	Period in Seconds:
2	5 sec. or less	8	16 or 17 sec.
3	6 or 7 sec.	9	18 or 19 sec.
4	8 or 9 sec.	0	20 or 21 sec.
5	10 or 11 sec.	1	Over 21 sec.
6	12 or 13 sec.	X	Calm, or period not determined
7	14 or 15 sec.		

**Table 5. HEIGHT OF THE WAVES (H<sub>w</sub>)**

- The average value of the wave height (vertical distance between trough and crest) is reported, as obtained from the larger well formed waves of the wave system being observed.
- Each code figure provides for reporting a range of heights. For example: 1 =  $\frac{1}{4}$  m (1 ft) to  $\frac{3}{4}$  m ( $2\frac{1}{2}$  ft); 5 =  $2\frac{1}{4}$  m (7 ft) to  $2\frac{3}{4}$  m (9 ft); 9 =  $4\frac{1}{4}$  m ( $13\frac{1}{2}$  ft) to  $4\frac{3}{4}$  m (15 ft), etc.
- If a wave height comes exactly midway between the heights corresponding to two code figures, the lower code figure is reported; e.g. a height of  $2\frac{3}{4}$  m is reported by code figure 5.

Code			Code
0	Less than ¼ m (1 ft)	Add 50 to Dw Dw	0 5 m (16 ft)
1	½ m ( 1½ ft)		1 5½ m (17½ ft)
2	1 m ( 3 ft)		2 6 m (19 ft)
3	1½ m ( 5 ft)		3 6½ m (21 ft)
4	2 m ( 6½ ft)		4 7 m (22½ ft)
5	2½ m ( 8 ft)		5 7½ m (24 ft)
6	3 m ( 9½ ft)		6 8 m (25½ ft)
7	3½ m (11 ft)		7 8½ m (27 ft)
8	4 m (13 ft)		8 9 m (29 ft)
9	4½ m (14 ft)		9 9½ m (30½ ft) or more
x	Height not determined		

Table 6. WIND FORCE CODE

The Beaufort force of the wind is estimated from the appearance of the sea surface, according to the table below. This table is only intended as a guide to show roughly what may be expected on the open sea, remote from land. Factors which must be taken into account are the "lag" effect between the wind increasing and the sea getting up; and the influence of "fetch", depth, swell, heavy rain and tide effect on the appearance of the sea. Estimation of the wind force by this method becomes unreliable in shallow water or when close inshore, owing to the tidal effect and the shelter provided by the land.

Code	Appearance of sea if fetch and duration of the blow have been sufficient to develop the sea fully	Description
00	Sea like a mirror	Calm
01	Ripples with the appearance of scales are formed, but without foam crests.	Light Air
02	Small wavelets; crests have a glassy appearance and do not break.	Light Breeze
03	Large wavelets; crests begin to break; foam of glassy appearance; perhaps scattered white horses.	Gentle Breeze
04	Small waves, becoming longer; fairly frequent white horses.	Moderate breeze
05	Moderate waves; many white horses are formed (chance of some spray)	Fresh Breeze
06	Large waves; white foam crests everywhere (probably some spray)	Strong Breeze
07	Sea heaps up and white foam from breaking waves begins to be blown in streaks along the direction of the wind.	Near Gale
08	Moderately high waves; edges of crests begin to break into the spindrift; foam is blown in well-marked streaks along the direction of the wind.	Gale
09	High waves; dense streaks of foam along wind; crests begin to topple, tumble and roll over; spray may affect visibility.	Strong Gale
10	Very high waves with long overhanging crests; foam in great patches blown in dense white streaks along wind; sea surface takes a white appearance; tumbling becomes heavy and shock-like; visibility affected.	Storm
11	Exceptionally high waves (medium sized ships may be lost to view behind waves); sea covered with long white patches of foam lying along the wind; everywhere edges of crests are blown into froth; visibility affected.	Violent Storm
12	Air is filled with foam and spray; sea completely white with driving spray; visibility seriously affected.	Hurricane

Table 7. PRESENT WEATHER

W.W. CODE

## NO PRECIPITATION ON STATION AT TIME OF OBSERVATION

Code figure		ww	
No meteors except photometeors	00	Cloud development not observed or not observable	
	01	Clouds generally dissolving or becoming less developed	
	02	State of sky on the whole unchanged	
Haze, dust, sand or smoke	03	Clouds generally forming or developing	
	04	Visibility reduced by smoke, e.g. veldt or forest fires, industrial smoke or volcanic ashes	
	05	Haze	
	06	Widespread dust in suspension in the air, not raised by wind at or near the station at the time of observation	
	07	Dust or sand raised by wind at or near the station at the time of observation, but no well developed dust whirl(s) or sand whirl(s), and no duststorm or sandstorm seen	
	08	Well developed dust whirl(s) or sand whirl(s) seen at or near the station during the preceding hour or at the time of observation, but no dustorm or sandstorm	
	09	Duststorm or sandstorm within sight at the time of observation, or at the station during the preceding hour	
	10	Mist	
	11	Presence of shallow fog or ice fog at the station, whether on land or sea, not deeper than about 2 metres on land or 10 metres at sea	
	12	More of less continuous	
	13	Lightning visible, no thunder heard	
	14	Precipitation within sight, not reaching the ground or the surface of the sea	
	15	Precipitation within sight, reaching the ground or the surface of the sea, but distant (i.e. estimated to be more than 5 km) from the station	
	16	Precipitation within sight, reaching the ground or the surface of the sea, near to, but not at the station	
	17	Thunderstorm, but no precipitation at the time of observation	
	18	Squalls	at or within sight of the station during the preceding hour or at the time of observation
	19	Funnel clouds	
ww = 20 - 29			
	20	Precipitation, fog, ice fog or thunderstorm at the station during the preceding hour but not at the time of observation	
	21	Drizzle (not freezing) or snow grains	
	22	Rain (not freezing)	
	23	Snow	
	24	Rain and snow or ice pellets, type (a)	
	25	Freezing drizzle or freezing rain	
	26	Shower(s) of rain	
	27	Shower(s) of snow, or of rain and snow	
	28	Shower(s) of hail, or of rain and hail	
	29	Fog or ice fog	
ww = 30 - 39			
	30	Thunderstorm (with or without precipitation)	
	31	Duststorm, sandstorm, drifting or blowing snow	
	32	Slight or moderate duststorm or sandstorm	
	33	Slight or moderate duststorm or sandstorm	
	34	Severe duststorm or sandstorm	
	35	Severe duststorm or sandstorm	
	36	Slight or moderate blowing snow	
	37	Heavy drifting snow	
	38	Slight or moderate blowing snow	
	39	Heavy blowing snow	
ww = 40 - 49			
	40	Fog or ice fog at the time of observation	
	41	Fog or ice fog at a distance at the time of observation, but not at the station during the preceding hour, the fog or ice fog extending to a level above that of the observer	
	42	Fog or ice fog in patches	
	43	Fog or ice fog, sky visible	
	44	Fog or ice fog, sky invisible	
	45	Fog or ice fog, sky visible	
	46	Fog or ice fog, sky invisible	
	47	Fog or ice fog, sky visible	
	48	Fog or ice fog, sky invisible	
	49	Fog, depositing rime, sky visible	
		Fog, depositing rime, sky invisible	

## NO PRECIPITATION ON STATION AT TIME OF OBSERVATION



## PRECIPITATION ON STATION AT TIME OF OBSERVATION

## ww = 50 - 59 Drizzle

- |    |  |   |                                      |
|----|--|---|--------------------------------------|
| 50 | Drizzle, not freezing, intermittent          | { | slight at time of observation        |
| 51 | Drizzle, not freezing, continuous            |   |                                      |
| 52 | Drizzle, not freezing, intermittent          | { | moderate at time of observation      |
| 53 | Drizzle, not freezing, continuous            |   |                                      |
| 54 | Drizzle, not freezing, intermittent          | { | heavy (dense) at time of observation |
| 55 | Drizzle, not freezing, continuous            |   |                                      |
| 56 | Drizzle, freezing, slight                    |   |                                      |
| 57 | Drizzle, freezing, moderate or heavy (dense) |   |                                      |
| 58 | Drizzle and rain, slight                     |   |                                      |
| 59 | Drizzle and rain, moderate or heavy          |   |                                      |

## ww = 60 - 69 Rain

- |    |   |   |                                 |
|----|---|---|---------------------------------|
| 60 | Rain, not freezing, intermittent            | { | slight at time of observation   |
| 61 | Rain, not freezing, continuous              |   |                                 |
| 62 | Rain, not freezing, intermittent            | { | moderate at time of observation |
| 63 | Rain, not freezing, continuous              |   |                                 |
| 64 | Rain, not freezing, intermittent            | { | heavy at time of observation    |
| 65 | Rain, not freezing, continuous              |   |                                 |
| 66 | Rain, freezing, slight                      |   |                                 |
| 67 | Rain, freezing, moderate or heavy           |   |                                 |
| 68 | Rain or drizzle and snow, slight            |   |                                 |
| 69 | Rain or drizzle and snow, moderate or heavy |   |                                 |

## 70 - 79 Solid precipitation not in showers

- |    |   |   |                                 |
|----|---|---|---------------------------------|
| ww |   |   |                                 |
| 70 | Intermittent fall of snow flakes                      | { | slight at time of observation   |
| 71 | Continuous fall of snow flakes                        |   |                                 |
| 72 | Intermittent fall of snow flakes                      | { | moderate at time of observation |
| 73 | Continuous fall of snow flakes                        |   |                                 |
| 74 | Intermittent fall of snow flakes                      | { | heavy at time of observation    |
| 75 | Continuous fall of snow flakes                        |   |                                 |
| 76 | Ice prisms (with or without fog)                      |   |                                 |
| 77 | Snow grains (with or without fog)                     |   |                                 |
| 78 | Isolated starlike snow crystals (with or without fog) |   |                                 |
| 79 | Ice pellets, type (a)                                 |   |                                 |

## ww = 80 - 99 Showery precipitation, or precipitation with current or recent thunderstorm

- |    |  |   |   |
|----|--|---|---|
| 80 | Rain shower(s), slight   |   |   |
| 81 | Rain shower(s), moderate or heavy  |   |   |
| 82 | Rain shower(s), violent  |   |   |
| 83 | Shower(s) of rain and snow mixed, slight   |   |   |
| 84 | Shower(s) of rain and snow mixed, moderate or heavy  |   |   |
| 85 | Snow shower(s), slight   |   |   |
| 86 | Snow shower(s), moderate or heavy  |   |   |
| 87 | Shower(s) of snow pellets or ice pellets, type (b), with or without rain or rain and snow mixed  | { | - slight  |
| 88 | Shower(s) of hail, with or without rain or rain and snow mixed, not associated with thunder      |   |   |
| 89 | Shower(s) of hail, with or without rain or rain and snow mixed, not associated with thunder      | { | - moderate or heavy   |
| 90 | Slight rain at time of observation   |   |   |
| 91 | Moderate or heavy rain at time of observation  | { | thunderstorm during the preceding hour but not at time of observation |
| 92 | Slight snow, or rain and snow mixed or hail at time of observation                               |   |   |
| 93 | Moderate or heavy snow, or rain and snow mixed or hail at time of observation                    | { | thunderstorm at time of observation                                   |
| 94 | Thunderstorm, slight or moderate, without hail, but with rain and/or snow at time of observation |   |   |
| 95 | Thunderstorm, slight or moderate, with hail at time of observation                               | { | thunderstorm at time of observation                                   |
| 96 | Thunderstorm, heavy, without hail, but with rain and/or snow at time of observation              |   |   |
| 97 | Thunderstorm, combined with duststorm or sandstorm at time of observation                        | { | thunderstorm at time of observation                                   |
| 98 | Thunderstorm, heavy, with hail at time of observation  |   |   |
| 99 | Thunderstorm, heavy, with hail at time of observation  |   |   |

## PRECIPITATION ON STATION AT TIME OF OBSERVATION

Table 8. CLOUD TYPE CODE

Code	Cloud Type	Code	Cloud Type
0	Cirrus ..... Ci	5	Nimbostratus ..... Ns
1	Cirrocumulus ..... Cc	6	Stratocumulus ..... Sc
2	Cirrostratus ..... Cs	7	Stratus ..... St
3	Alto cumulus ..... Ac	8	Cumulus ..... Cu
4	Altostratus ..... As	9	Cumulonimbus ..... Cb
X	Cloud not visible owing to darkness, fog, dust storm, sand storm, or other analogous phenomena		

Table 9. CLOUD AMOUNT CODE

Code	Cloud Cover	Code	Cloud Cover
0	0	6	6 oktas
1	1 okta or less, but not zero	7	7 oktas or more, but not 8 oktas
2	2 oktas	8	8 oktas
3	3 oktas	9	Sky obscured, or cloud amount cannot be estimated
4	4 oktas		
5	5 oktas		

Note: 1 okta =  $\frac{1}{8}$  of the sky covered

Table 10. VISIBILITY

Code	Estimate of hor. Visibility
0	Less than 50 metres (less than 55 yards)
1	50-200 metres (approx. 55-220 yards)
2	200-500 metres (approx. 220-550 yards)
3	500-1,000 metres (approx. 550 yards- $\frac{5}{8}$ n.m.)
4	1-2 km (approx. $\frac{5}{8}$ -1 n.m.)
5	2-4 km (approx. 1-2 n.m.)
6	4-10 km (approx. 2-6 n.m.)
7	10-20 km (approx. 6-12 n.m.)
8	20-50 km (approx. 12-30 n.m.)
9	50 km or more (30 n.m. or more)

Note: n.m. = nautical mile

TABLE 11. INSTITUTE CODE

Code	Institute
01	Marine Ecology Laboratory, Bedford Institute
02	Pacific Oceanographic Group
03	Biological Station, St. Andrews, N.B.
04	Arctic Biological Station, Ste. Anne de Bellevue, P.Q.
05	Biological Station, St. John's Nfld.
06	Station de Biologie Marine, Grande Riviere, P.Q.
07	Marine Sciences Branch, Central Region
08	Defence Research Establishment, Atlantic
09	Defence Research Establishment, Pacific
10	Atlantic Oceanographic Laboratory, Bedford Institute
11	Polar Continental Shelf Project
12	Great Lakes Institute
13	Institute of Oceanography, University of British Columbia
14	Institute of Oceanography, Dalhousie University
15	Marine Sciences Branch, Pacific Region
16	Department of Transport
17	Marine Sciences Centre, McGill University
18	Canadian Forces Maritime Command, East Coast
19	Canadian Forces Maritime Command, West Coast
20	Ontario Water Resources Commission
21	Dept. of National Health and Welfare
22	Inland Waters Branch, Dept. of Energy, Mines and Resources.





### SECTION III

Serial oceanographic data





GENERAL INFORMATION

<u>Institute:</u>	Atlantic Oceanographic Laboratory
<u>Observation platform:</u>	CSS "Baffin"
<u>Vessel's cruising speed:</u>	12 knots
<u>Total number of stations occupied:</u>	47
<u>Anemometer height above sea level:</u>	22 metres
<u>Barometer readings:</u>	Aneroid Barometer (corrected)
<u>Air temperature:</u>	Sling Psychrometer
<u>Wet bulb temperature:</u>	Sling Psychrometer
<u>Surface sea water temperature:</u>	Bucket sample (mercury in glass thermometer).

The following Standard Deviations were used to express both measurement and interpolation error estimates.

Temperature:	0.01
Salinity:	0.003



C-REF-NO 002	YR 1966	DEPTH 90	WAVES 1 3424	AIR T 06.6	VIS 6
CONS. NO 001	MONTH 4	MXSAMPD 01	WAVES 2 0335	WET B 04.8	STN
LAT 44-238N	DAY 12	NO.DPTH 6	WND-DIR 340	WW-CODE 70	
LON 63-282W	HR 18.4	W-COLOR	WND-SPD 10	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1022.0	CLD-AMT 8	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	PO4	-P-	NO2	NO3	SIO	PH
184	0000	0135	31205		2500	14502						
184	0010	0126	31203		2501	14499						
184	0021	0037	31203		2505	14461						
184	0030	-0043	31520		2534	14430						
184	0050	-0033	31921		2566	14443						
184	0076	-0024	31999		2572	14453						

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0135	31205		2500	14502	0000	00000	2965
0010	0126	31203		2501	14499	0030	00002	2961
0020	0047	3119 B		2504	14465	0059	00006	2927
0030	-0043	31520		2534	14430	0087	00013	2640
0050	-0033	31921		2566	14443	0137	00033	2336
0075	-0029	32007		2573	14450	0195	00070	2270

C-REF-NO 002	YR 1966	DEPTH 150	WAVES 1 3622	AIR T 01.5	VIS 7
CONS. NO 002	MONTH 4	MXSAMPD 01	WAVES 2 0234	WET B 00.7	STN
LAT 44-155N	DAY 12	NO.DPTH 7	WND-DIR 360	WW-CODE 02	
LON 63-195W	HR 22.7	W-COLOR	WND-SPD 11	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1024.9	CLD-AMT 8	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	PO4 -P-	NO2	NO3	SIO	PH
227	0000	0145	31756		2544	14514					
227	0010	0130	31791		2547	14509					
227	0021	-0003	32108		2580	14455					
227	0030	0011	32120		2580	14463					
227	0050	0010	32166		2584	14466					
227	0076	0034	32242		2589	14483					
227	0100	0107	32500		2606	14523					

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0145	31756		2544	14514	0000	00000	2551
0010	0130	31791		2547	14509	0025	00001	2515
0020	0008 B	3208 C		2577	14459	0049	00005	2232
0030	0011	32120		2580	14463	0072	00011	2203
0050	0010	32166		2584	14466	0116	00029	2166
0075	0032	32237		2589	14482	0170	00063	2122
0100	0107	32500		2606	14523	0221	00109	1961



C-REF-NO 002 YR 1966 DEPTH 270 WAVES 1 0122 AIR T 01.6 VIS 8  
 CONS. NO 003 MONTH 4 MXSAMP 02 WAVES 2 0233 WET 8 00.6 STN  
 LAT 43-528N DAY 13 NO.DPTH 9 WND-DIR 010 WW-CODE 01  
 LON 62-532W HR 01.9 W-COLOR WND-SPD 07 CLD-TPE 6  
 MARSD SQ 151 C/I 1810 W-TRNSP BARO 1025.8 CLD-AMT 4 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	PO4	-P-	NO2	NO3	SIO	PH
019	0000	0180	31749		2541	14529						
019	0010	0171	31674		2535	14526						
019	0020	0142	31711		2540	14515						
019	0029	0112	32055		2570	14508						
019	0049	0093	32286		2589	14506						
019	0073	0175	32779		2624	14553						
019	0096	0303	33224		2649	14619						
019	0145	0411	33818		2686	14681						
019	0194	0443	34171		2710	14707						

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0180	31749		2541	14529	0000	00000	2578
0010	0171	31674		2535	14526	0026	00001	2629
0020	0142	31711		2540	14515	0052	00005	2583
0030	0109	3207 C		2571	14507	0077	00012	2288
0050	0095	32304		2591	14507	0121	00030	2104
0075	0186	32820		2626	14559	0170	00060	1770
0100	0317	33286		2653	14627	0211	00097	1523
0125	0385 C	3362 C		2673	14664	0247	00138	1336
0150	0440 G	3390 H		2689	14695	0279	00183	1182
0175	0455 D	3409 D		2702	14708	0307	00230	1061

C-REF-NO 002	YR 1966	DEPTH 85	WAVES 1 0122	AIR T 01.6	VIS 8
CONS. NO 004	MONTH 4	MXSAMPD 01	WAVES 2 0233	WET B 00.8	STN
LAT 43-288N	DAY 13	NO.DPTH 6	WND-DIR 010	WW-CODE 02	
LON 62-272W	HR 04.8	W-COLOR	WND-SPD 05	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1027.9	CLD-AMT 8	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	PO4 -P-	NO2	NO3	SIO	PH
048	0000	0150	31652		2535	14515					
048	0010	0149	31644		2534	14516					
048	0021	0146	31644		2535	14516					
048	0030	0032	31827		2556	14468					
048	0050	0029	32072		2575	14474					
048	0075	0079	32250		2587	14503					

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0150	31652		2535	14515	0000	00000	2633
0010	0149	31644		2534	14516	0027	00001	2639
0020	0149	31639		2534	14517	0053	00005	2643
0030	0032	31827		2556	14468	0079	00012	2436
0050	0029	32072		2575	14474	0126	00031	2247
0075	0079	32250		2587	14503	0181	00066	2136

C-REF-NO 002 YR 1966 DEPTH 100 WAVES 1 0122 AIR T 02.0 VIS B  
 CONS. NO 005 MONTH 4 MXSAMPC 01 WAVES 2 0233 WET B 01.3 STN  
 LAT 43-106N DAY 13 NO.DPTH 7 WND-DIR 010 WW-CODE 03  
 LON 62-063W HR 07.0 W-COLOR WND-SPC 08 CLD-TPE 6  
 MARSD SQ 151 C/I 1810 W-TRANSP BARO 1027.5 CLD-AMT 8 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	PO4	-P-	NO2	NO3	SIO	PH
070	0000	0260	32277		2577	14572						
070	0010	0257	32283		2578	14572						
070	0021	0252	32350		2584	14573						
070	0030	0236	32386		2588	14568						
070	0050	0179	32679		2615	14550						
070	0075	0194	33035		2643	14565						
070	0089	0241	33324		2662	14592						

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0260	32277		2577	14572	0000	00000	2234
0010	0257	32283		2578	14572	0022	00001	2227
0020	0253	32343		2583	14573	0045	00005	2179
0030	0236	32386		2588	14568	0066	00010	2134
0050	0179	32679		2615	14550	0107	00026	1872
0075	0194	33035		2643	14565	0151	00054	1613

C-REF-NO 002 YR 1966 DEPTH 920 WAVES 1 0322 AIR T 01.8 VIS 8  
 CONS. NO 006 MONTH 4 MXSAMPD 08 WAVES 2 0133 WET B 01.1 STN  
 LAT 42-508N DAY 13 NO.DPTH 14 WND-DIR 030 WW-CODE 03  
 LON 61-441W HR 10.0 W-COLOR WND-SPC 08 CLD-TPE 2  
 MARSD SQ 151 C/I 1810 W-TRNSP BARO 1028.7 CLD-AMT 7 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	PO4	-P-	NO2	NO3	SIO	PH
100	0000	0238	32721		2614	14568						
100	0010	0231	32702		2613	14566						
100	0020	0237	32739		2616	14571						
100	0030	0308	33020		2632	14608						
100	0050	0358	33197		2642	14635						
100	0075	0589	34023		2682	14746						
100	0100	0848	34701		2699	14860						
100	0150	0812	34873		2718	14857						
100	0200	0649	34724		2729	14800						
100	0300	0471	34651		2745	14743						
100	0399	0477	34764		2754	14763						
100	0499	0478	34852		2760	14781						
100	0599	0440	34858		2765	14782						
100	0801	0412	34872		2769	14804						

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0238	32721		2614	14568	0000	00000	1881
0010	0231	32702		2613	14566	0019	00001	1890
0020	0237	32739		2616	14571	0038	00004	1867
0030	0308	33020		2632	14608	0056	00008	1711
0050	0358	33197		2642	14635	0089	00022	1623
0075	0589	34023		2682	14746	0126	00045	1250
0100	0848	34701		2699	14860	0155	00071	1099
0125	0884 I	3491 I		2709	14880	0182	00102	1007
0150	0812	34873		2718	14857	0206	00136	0928
0175	0735 D	3481 F		2724	14831	0229	00174	0866
0200	0649	34724		2729	14800	0250	00214	0820
0225	0587	34683		2734	14778	0270	00258	0775
0250	0536	3466 B		2738	14761	0289	00305	0736
0300	0471	34651		2745	14743	0325	00405	0670
0400	0477	34765		2754	14763	0389	00634	0604
0500	0478	34852		2761	14781	0447	00903	0551
0600	0454 E	3488 E		2765	14788	0501	01206	0513
0700	0435 D	3489 D		2768	14797	0552	01545	0493
*0800	0412	34872		2769	14804	0602	01929	0490



C-REF-NO 002	YR 1966	DEPTH 2920	WAVES 1 0422	AIR T 03.1	VIS 8
CONS. NO 007	MONTH 4	MXSAMP 10	WAVES 2 0133	WET B 01.9	STN
LAT 42-330N	DAY 13	NO.DPTH 15	WNC-DIR 040	WW-CODE 02	
LON 61-238W	HR 13.4	W-COLOR	WND-SPD 06	CLD-TPE 7	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1030.0	CLD-AMT 8	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	PO4	-P-	NO2	NO3	SIO	PH
133	0000	0340	32902		2620	14615						
133	0010	0338	32902		2620	14616						
133	0020	0337	32915		2621	14617						
133	0029	0313	32908		2623	14608						
133	0049	0324	33282		2652	14621						
133	0073	0452	33802		2680	14686						
133	0096	0578	34251		2701	14748						
133	0144	0796	34905		2723	14850						
133	0193	0779	34993		2732	14853						
133	0289	0491	34767		2752	14751						
133	0386	0541	34962		2762	14790						
133	0485	0435	34870		2767	14761						
133	0583	0456	34941		2770	14787						
133	0778	0440	34979		2775	14814						
133	0958	0400	34943		2776	14826						

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0340	32902		2620	14615	0000	00000	1826
0010	0338	32902		2620	14616	0018	00001	1825
0020	0337	32915		2621	14617	0037	00004	1815
0030	0311	3292 B		2624	14608	0055	00008	1790
0050	0328	33303		2653	14623	0088	00022	1516
0075	0463	33844		2682	14692	0123	00044	1242
0100	0602	34324		2704	14759	0152	00069	1045
0125	0727 D	3470 C		2717	14818	0177	00098	0929
0150	0803 B	3494 C		2724	14854	0199	00130	0868
0175	0804 C	3500 F		2729	14860	0221	00165	0825
0200	0758 D	3498 D		2734	14846	0241	00204	0780
0225	0683 I	3492 I		2740	14820	0260	00245	0721
*0250	0608 I	3487 I		2746	14793	0277	00288	0670
0300	0492 D	3479 D		2754	14753	0309	00378	0594
0400	0527 C	3495 C		2763	14786	0366	00579	0523
0500	0435 B	3488 B		2767	14764	0416	00813	0482
0600	0457	34949		2771	14791	0464	01083	0465
0700	0453	34977		2773	14806	0511	01392	0450
0800	0443 B	3499 B		2775	14819	0556	01741	0443

C-REF-NO 002 YR 1966 DEPTH 5140 WAVES 1 0122 AIR T 15.5 VIS 8  
 CONS. NO 008 MONTH 4 MXSAMP 52 WAVES 2 3555 WET B 12.0 STN  
 LAT 38-141N DAY 22 NO.DPTH 25 WND-DIR 010 WW-CODE 01  
 LON 44-226W HR 12.7 W-COLOR WND-SPD 09 CLD-TPE 8  
 MARSC SQ 113 C/I 1810 W-TRNSP BARO 1025.8 CLD-AMT 5 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	PO4	-P-	NO2	NO3	SIO	PH
127	0000	1750	36524		2658	15169					012	
127	0050	1757	36513	531	2655	15179					012	
127	0098	1759	36504	528	2654	15187					009	
127	0148	1756	36502	504	2655	15194					010	
127	0198	1758	36499	525	2654	15203					010	
127	0247	1756	36498	523	2654	15211					013	
127	0296	1743	36462	509	2655	15215					016	
169	0400	1680	36331	503	2660	15211					016	
169	0500	1537	36062	465	2672	15181					018	
127	0588	1427	35869	458	2682	15158					043	
127	0684	1223	35505	538	2695	15101					051	
127	0782	0956	35207	331	2721	15019					150	
127	0881	0715	35026	408	2744	14942					155	
127	0983	0589	35006	467	2759	14909					145	
127	1199	0459	34961	584	2771	14891					123	
148	1588	0401	34967	611	2778	14933					123	
148	2089	0369	34960	618	2781	15004					139	
148	2587	0335	34960	600	2784	15075					138	
148	3083	0292	34931	607	2786	15142					218	
148	3578	0251	34917	611	2788	15211					268	
148	4074	0232	34904	604	2789	15289					268	
148	4570	0227	34886	603	2788	15375					359	
148	4772	0228	34891	599	2788	15412					353	
148	4973	0229	34886	600	2788	15448					353	
148	5177	0231	34878	581	2787	15485					356	

\*DEPTH OF BOTTOM OBSERVATION GREATER THAN SOUNDING

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1750	36524	557 H	2658	15169	0000	00000	1466
0010	1752	36521		2657	15171	0015	00001	1475
0020	1753	36519		2657	15173	0030	00003	1485
*0030	1755	36516		2656	15175	0045	00007	1493
0050	1757	36513	531	2655	15179	0075	00019	1507
0075	1759	36508	522 B	2655	15183	0113	00044	1524
0100	1759	36504	527	2654	15187	0152	00078	1536
0125	1757	36503	514 B	2654	15191	0190	00123	1542
0150	1756	36502	505	2655	15195	0229	00178	1548
0175	1757	36500	514 B	2654	15199	0268	00244	1560

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0200	1758	36499	525	2654	15204	0308	00320	1572
0225	1758	36500	526	2654	15208	0348	00406	1579
0250	1756	36497	522	2654	15211	0387	00503	1585
0300	1742	36459	509	2655	15215	0468	00730	1597
0400	1680	36331	503	2660	15211	0628	01306	1579
0500	1537	36062	465	2672	15181	0782	02018	1483
0600	1405	3583 B	473 D	2683	15152	0928	02839	1401
0700	1180	35450	505 G	2699	15089	1062	03730	1249
0800	0907	35164	335 D	2725	15003	1175	04595	0987
1000	0574	35002	478	2761	14906	1338	06069	0626
1200	0459	34961	584	2771	14891	1455	07376	0523
1500	0403 C	34961	616 C	2777	14919	1607	09485	0478
2000	0373	34962	619	2781	14991	1851	13886	0481
2500	0341	34961	603	2784	15063	2094	19538	0475
3000	0299	34936	605	2786	15131	2334	26341	0464
3500	0257	34919	611	2788	15200	2564	34079	0438
4000	0234	34906	605	2789	15277	2788	42756	0434
4500	0227	34887	603	2788	15363	3016	52859	0457
5000	0229	34886	594	2788	15453	3259	64818	0483

C-REF-NO 002 YR 1966 DEPTH 5120 WAVES 1 0222 AIR T 15.6 VIS 8  
 CONS. NO 009 MONTH 4 MXSAMPC 52 WAVES 2 3554 WET B 11.7 STN  
 LAT 38-41CN DAY 22 NO.DPTH 25 WND-DIR 020 WW-CODE 01  
 LON 44-131W HR 20.3 W-COLOR WND-SPC 10 CLD-TPE 8  
 MARSD SQ 113 C/I 1810 W-TRNSP BARO 1027.6 CLD-AMT 5 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	PO4	-P-	NO2	NO3	SIO	PH
203	0000	1760	36492		2653	15171					013	
203	0050	1743	36491	530	2657	15174					013	
203	0100	1740	36471	526	2656	15182					013	
203	0150	1715	36435	520	2660	15182					013	
203	0200	1712	36423	510	2659	15189					013	
203	0249	1707	36410	501	2660	15196					013	
203	0299	1687	36376	484	2662	15197					032	
203	0397	1615	36192	461	2665	15190					036	
203	0495	1471	35924	490	2677	15157					062	
203	0593	1282	35618	473	2693	15108					126	
203	0690	1076	35344	362	2711	15049					162	
203	0786	0809	35096	363	2736	14963					155	
203	0883	0660	34995	475	2749	14920					143	
203	0979	0543	34978	575	2763	14889					126	
203	1175	0455	34977	565	2773	14886					121	
229	1560	0385	34929	627	2777	14921					145	
229	2084	0363	34959		2781	15001					182	
229	2593	0329	34951	604	2784	15073					218	
229	3084	0290	34930	578	2786	15141					270	
229	3563	0249	34912	595	2788	15207					326	
229	4040	0231	34893	591	2788	15283					354	
229	4527	0226	34895	579	2789	15367					365	
229	4732	0227	34885	578	2788	15404					365	
229	4943	0228	34898		2789	15442					365	
229	5162	0230	34890	585	2788	15482						

\*DEPTH OF BOTTOM OBSERVATION GREATER THAN SOUNDING

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1760	36492	531 C	2653	15171	0000	00000	1512
0010	1758	36493		2654	15172	0015	00001	1511
0020	1756	36494		2654	15173	0030	00003	1509
*0030	1754 B	36493		2655	15174	0046	00007	1508
0050	1743	36491	530	2657	15174	0076	00019	1491
0075	1742	36483	529	2657	15178	0114	00044	1503
0100	1740	36471	526	2656	15182	0152	00078	1516
0125	1728	36453	523	2658	15182	0190	00122	1509
0150	1715	36435	520	2660	15182	0228	00175	1501
0175	1712	36428	515	2660	15185	0265	00235	1509



DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0200	1712	36423	510	2659	15189	0304	00312	1520
0225	1710	36418	506	2659	15193	0342	00396	1528
0250	1707	36410	501	2660	15196	0381	00490	1534
0300	1687	36375	484	2662	15197	0458	00708	1530
0400	1611	36185	462	2665	15189	0612	01263	1529
0500	1462	35908	491	2677	15155	0762	01951	1432
0600	1269	35597	465	2694	15104	0899	02724	1288
0700	1047 B	35314	357	2713	15040	1020	03525	1100
0800	0783	35074	376 B	2738	14955	1118	04280	0852
1000	0528 B	34977	580 C	2765	14887	1263	05594	0581
1200	0448	34974	568	2774	14887	1373	06824	0499
1500	0390	34937	615 B	2777	14913	1521	08890	0479
2000	0364	34952	637 E	2781	14987	1764	13267	0476
2500	0336	34954	613 B	2784	15060	2005	18869	0472
3000	0297	34934	581	2786	15130	2243	25634	0462
3500	0254	34914	592	2788	15198	2473	33343	0436
4000	0232	34894	592	2788	15276	2697	42061	0439
4500	0226	34895	580	2789	15363	2926	52135	0450
5000	0229	3489 B	581	2788	15453	3165	63953	0479

C-REF-NO 002	YR 1966	DEPTH 4830	WAVES 1	XX	AIR T 14.2	VIS 8
CONS. NO 010	MONTH 4	MXSAMPC 48	WAVES 2	XX	WET B 10.4	STN
LAT 39-080N	DAY 23	NO.DPTH 24	WND-DIR		WW-CODE 01	
LON 43-559W	HR 03.7	W-COLOR	WND-SPD		CLD-TPE 8	
MARSC SQ 113	C/I 1810	W-TRNSP	BARO 1031.5		CLD-AMT 2	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	PO4	-P-	NO2	NO3	SIO	PH
037	0000	1540	36269		2688	15102					016	
037	0050	1573	36238	551	2678	15120					022	
037	0099	1570	36228	547	2678	15127					021	
037	0149	1539	36165	541	2680	15125					024	
037	0199	1528	36139	541	2680	15129					024	
037	0248	1462	35988	515	2683	15115					035	
037	0297	1404	35859	501	2686	15102					039	
037	0395	1256	35568	504	2694	15066					065	
037	0493	1099	35380	356	2709	15025					115	
037	0590	0864	35124	352	2729	14952					153	
037	0688	0703	35035	410	2746	14905					155	
037	0785	0588	34986	468	2758	14875					143	
037	0883	0537	34993	521	2765	14871					136	
037	0981	0525	35055	537	2771	14883					130	
037	1178	0446	34994	584	2775	14883					127	
052	1548	0400	34967	620	2778	14926					123	
052	2031	0367	34962	621	2781	14993					136	
052	2522	0336	34959	623	2784	15064					167	
052	3022	0299	34938	617	2786	15134					203	
052	3526	0257	34921	621	2788	15204					243	
052	4036	0231	34901	615	2789	15282					305	
052	4541	0227	34897	618	2789	15370					296	
052	4740	0226	34902	638	2789	15405					227	
052	4838	0226	34906	635	2790	15423					199	

\*DEPTH OF BOTTOM OBSERVATION GREATER THAN SOUNDING

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1540	36269	558 C	2688	15102	0000	00000	1183
0010	1549	36267		2686	15106	0012	00001	1207
0020	1557	3626 B		2684	15110	0024	00003	1229
*0030	1563	3626 B		2682	15114	0037	00006	1249
0050	1573	36238	551	2678	15120	0062	00016	1293
0075	1575	36235	548	2677	15125	0095	00037	1308
0100	1569	36227	547	2678	15127	0128	00067	1309
0125	1554	36196	544	2679	15126	0161	00105	1307
0150	1539	36165	541	2680	15125	0194	00152	1304
0175	1536 B	3616 B	542	2680	15128	0227	00207	1310
0200	1527	36136	541	2680	15129	0260	00270	1315

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0225	1496 B	3607 B	528	2682	15123	0293	00342	1308
0250	1460	35983	514	2684	15114	0326	00423	1299
0300	1400	35850	502	2686	15101	0391	00607	1286
0400	1249	35558	497 B	2694	15064	0518	01061	1226
0500	1082	35360	352	2711	15020	0634	01597	1084
0600	0845	35110	356	2731	14946	0734	02154	0887
0700	0686	35026	317	2748	14901	0815	02694	0724
0800	0577	34983	317	2759	14873	0883	03215	0617
1000	0518	3505 B	342	2772	14884	0997	04262	0511
1200	0441	34991	388	2776	14885	1098	05394	0478
1500	0402	34967	318	2778	14918	1242	07406	0473
2000	0369	34962	622	2781	14989	1483	11753	0475
2500	0337	34959	623	2784	15061	1724	17342	0470
3000	0301	34939	617	2786	15132	1962	24116	0464
3500	0259	34922	621	2788	15201	2193	31869	0439
4000	0232	34902	615	2789	15277	2417	40563	0434
4500	0227	34897	616	2789	15363	2644	50592	0451

C-REF-NO 002 YR 1966 DEPTH 4590 WAVES 1 3622 AIR T 15.5 VIS 8  
 CONS. NO 011 MONTH 4 MXSAMPD 46 WAVES 2 0233 WET B 11.5 STN  
 LAT 39-335N DAY 23 NO.DPTH 24 WND-DIR 360 WW-CODE 01  
 LON 43-370W HR 09.9 W-COLOR WND-SPD 05 CLD-TPE 8  
 MARSD SQ 113 C/I 1810 W-TRNSP BARO 1031.6 CLD-AMT 2 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	PO4	-P-	NO2	NO3	SIO	PH
099	0000	1580	36300		2681	15115					020	
099	0050	1562	36236	543	2680	15117					023	
099	0100	1525	36155	548	2682	15112					026	
099	0150	1504	36128	541	2685	15114					023	
099	0201	1498	36112	542	2685	15120					022	
099	0250	1481	36073	536	2686	15122					026	
099	0300	1468	36041	530	2686	15126					030	
099	0397	1423	36003	548	2693	15127					030	
099	0493	1394	35945	539	2695	15133					033	
099	0587	1269	35683	482	2700	15103					060	
099	0681	1011	35281	342	2717	15023					134	
099	0772	0802	35076	364	2735	14958					158	
099	0862	0651	35013	441	2752	14914					155	
099	0954	0557	34998	509	2763	14891					142	
099	1142	0505	35049	553	2773	14902					131	
126	1524	0414	34989	611	2778	14928					133	
126	1992	0370	34959	626	2781	14988					133	
126	2466	0340	34955	624	2783	15056					154	
126	2947	0304	34942	630	2786	15124					176	
126	3434	0265	34925	627	2788	15191					221	
126	3923	0236	34904	622	2789	15265					267	
126	4215	0230	34898	609	2789	15313					254	
126	4409	0225	34907	637	2790	15346					221	
126	4602	0224	34907	644	2790	15380					185	

\*DEPTH OF BOTTOM OBSERVATION GREATER THAN SOUNDING

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1580	36300	539 D	2681	15115	0000	00000	1247
0010	1575	36288		2681	15115	0013	00001	1252
0020	1571	36278		2681	15115	0025	00003	1257
*0030	1566	36258		2681	15115	0038	00006	1260
0050	1562	36236	543	2680	15117	0063	00016	1270
0075	1544	36193	544	2681	15115	0095	00037	1270
0100	1525	36155	548	2682	15112	0127	00066	1266
0125	1513	36137	545	2684	15112	0159	00102	1260
0150	1504	36128	541	2685	15114	0191	00147	1256
0175	1501	36121	541	2685	15117	0223	00200	1262
0200	1498	36112	542	2685	15120	0255	00262	1270



DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0225	1490	36094	539	2685	15121	0287	00332	1275
0250	1481	36073	536	2686	15122	0319	00410	1278
0300	1468	36041	530	2686	15126	0383	00593	1289
0400	1423	36003	548	2693	15127	0512	01053	1251
0500	1389	35931	537	2695	15132	0638	01640	1261
0600	1236 B	3563 B	460 C	2702	15094	0763	02342	1203
0700	0963	35225	338 B	2721	15009	0875	03088	1019
0800	0749	35046	386	2741	14942	0968	03799	0820
1000	0535 C	3501 B	526 B	2766	14890	1109	05074	0568
1200	0489	3505 B	564	2775	14905	1217	06294	0501
1500	0419	34996	609	2778	14926	1365	08353	0474
2000	0369	34959	626	2781	14989	1607	12723	0478
2500	0338	34954	624	2783	15061	1850	18355	0474
3000	0300	34940	630	2786	15131	2088	25132	0461
3500	0260	34922	627	2788	15201	2319	32880	0441
4000	0234	34901	616	2789	15278	2544	41631	0438
4500	0225	34905	635 B	2790	15362	2770	51589	0441

C-REF-NO 002 YR 1966 DEPTH 4690 WAVES 1 2822 AIR T 15.0 VIS 8  
 CONS. NO 012 MONTH 4 MXSAMPD 47 WAVES 2 XX WET B 12.2 STN  
 LAT 40-04CN DAY 23 NO.DPTH 24 WND-DIR 280 WW-CODE 03  
 LON 43-248W HR 17.0 W-COLOR WND-SPD 06 CLD-TPE 8  
 MARSD SQ 149 C/I 1810 W-TRANSP BARO 1032.0 CLD-AMT 7 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	PO4	-P-	NO2	NO3	SIO	PH
170	0000	1620	36306		2672	15127					019	
170	0050	1575	36266	557	2680	15121					019	
170	0099	1500	36141	554	2687	15104					023	
170	0149	1499	36141	557	2687	15112					023	
170	0199	1499	36140	557	2687	15120					023	
170	0247	1499	36142	552	2687	15128					023	
170	0297	1499	36137	552	2687	15136					023	
170	0396	1437	36000	536	2690	15131					031	
170	0495	1405	35974	537	2695	15137					031	
170	0595	1336	35813	515	2697	15129					045	
170	0694	1163	35499	425	2707	15082					054	
170	0794	0935	35209	362	2724	15013					142	
170	0894	0773	35087	410	2740	14967					150	
170	0994	0651	35045	463	2754	14936					142	
170	1193	0540	35061	540	2770	14925					133	
182	1435	0448	35008	595	2776	14927					125	
182	1913	0377	34945	631	2779	14977					125	
182	2398	0352	34950	622	2782	15049					159	
182	2891	0316	34945	623	2785	15119					173	
182	3392	0275	34925	625	2787	15188					208	
182	3896	0238	34905	621	2789	15261					265	
182	4295	0226	34899	621	2789	15326					293	
182	4491	0226	34913	626	2790	15361					310	
182	4684	0224	34907	638	2790	15394					207	

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1620	36306	560 C	2672	15127	0000	00000	1330
0010	1606 B	3629 B		2674	15124	0013	00001	1314
0020	1592 C	3627 C		2676	15122	0026	00003	1299
*0030	1580 D	3626 F		2678	15119	0040	00006	1286
0050	1575	36266	557	2680	15121	0065	00017	1277
0075	1534 B	3620 C	556	2684	15112	0097	00037	1245
0100	1500	36140	554	2687	15104	0128	00065	1222
0125	1495 B	3613 B	555	2687	15107	0159	00100	1225
0150	1499	36141	557	2687	15112	0190	00144	1236
0175	1499	36140	558	2687	15116	0221	00196	1244
0200	1499	36140	557	2687	15120	0253	00257	1252
0225	1499	36141	554	2687	15125	0284	00326	1259

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
C250	1499	36142	552	2687	15129	0316	00404	1267
C300	1498	36133	552	2687	15136	0381	00586	1285
0400	1436	35999	536	2690	15131	0510	01051	1281
C500	1403	35969	537	2695	15137	0638	01645	1264
C600	1329	35799	511	2697	15127	0766	02367	1263
0700	1149	35479	419	2708	15078	0889	03185	1168
0800	C924	35198	363	2725	15010	0998	04023	0991
1000	0646	35045	466	2755	14935	1169	05575	0698
1200	C537	35060	542	2770	14925	1296	07000	0557
1500	0433	34996	604	2777	14931	1456	09206	0493
2000	C371	34944	631	2779	14990	1706	13720	0491
2500	0345	34950	622	2782	15064	1955	19515	0488
3000	0307	34941	624	2785	15134	2200	26472	0472
3500	0266	34920	624	2787	15203	2437	34403	0451
4000	C233	34901	620	2789	15277	2664	43240	0437
4500	C225	34907	627	2790	15362	2889	53167	0440

C-REF-NO 002 YR 1966 DEPTH 4770 WAVES 1 2722 AIR T 13.8 VIS 8  
 CONS. NO 013 MONTH 4 MXSAMPC 48 WAVES 2 XX WET B 12.1 STN  
 LAT 40-266N DAY 23 NO.DPTH 24 WND-DIR 270 KW-CODE 01  
 LON 43-160W HR 22.4 W-COLOR WND-SPC 06 CLD-TPE 3  
 MARSD SQ 149 C/I 1810 W-TRNSP BARO 1029.4 CLD-AMT 7 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	PO4	-P-	NO2	NO3	SIO	PH
224	C000	1590	36270		2676	15118					021	
224	0050	1569	36248	551	2680	15119					023	
224	0100	1564	36242	550	2680	15126					023	
224	0150	1558	36235	547	2681	15132					023	
224	0201	1550	36220	546	2682	15138					023	
224	C250	1546	36208	544	2682	15144					023	
224	C301	1518	36150	542	2684	15143					030	
224	0401	1461	36015	525	2686	15140					033	
224	C502	1440	36021	543	2691	15150					032	
224	C602	1392	35934	540	2694	15150					038	
224	0703	1261	35650	464	2699	15119					065	
224	0803	1031	35319	377	2717	15051					118	
224	C902	0766	35048	405	2738	14966					148	
224	1002	0654	35035	461	2753	14938					140	
224	1199	C503	35003	558	2770	14910					127	
*244	1449	0431	34984	604	2776	14922					120	
*244	1928	C371	34941	638	2779	14977					121	
*244	2412	C349	34950	632	2782	15051					140	
*244	2901	C318	34946	627	2785	15122					168	
*244	3395	C279	34930	632	2787	15191					189	
*244	3895	0245	34911	632	2788	15264					243	
*244	4394	C228	34904	630	2789	15344					262	
*244	4593	C226	34908	641	2790	15379						
*244	4789	C225	34913	651	2790	15414					191	

\*DEPTH OF BOTTOM OBSERVATION GREATER THAN SOUNDING

\*MULTIPLE CAST CONTINUED NEXT DAY

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
C000	1590	36270	553 C	2676	15118	0000	00000	1290
C010	1586	36266		2677	15118	0013	00001	1288
C020	1582	36261		2678	15118	0026	00003	1285
*C030	1578	36258		2678	15119	0039	00006	1283
0050	1569	36248	551	2680	15119	0065	00017	1277
C075	1566	36244	550	2680	15122	0097	00037	1280
0100	1564	36242	550	2680	15126	0129	00066	1286
0125	1561	36239	549	2681	15129	0162	00104	1290
0150	1558	36235	547	2681	15132	0194	00150	1294
0175	1554	36228	546	2681	15135	0227	00204	1299



DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
C200	1550	36220	546	2682	15137	0260	00268	1304
C225	1549	36217	545	2682	15141	0293	00340	1312
0250	1546	36208	544	2682	15144	0326	00421	1320
0300	1519	36151	542	2683	15143	0392	00608	1317
0400	1461	36016	525	2686	15140	0526	01088	1323
C500	1440	36021	543	2691	15150	0658	01701	1305
0600	1393	35937	541	2694	15150	0789	02443	1296
0700	1266	35660	467	2699	15121	0919	03306	1264
C800	1039	35329	379	2716	15054	1038	04223	1097
1000	0655	35034	460	2753	14938	1222	05886	0719
1200	0503	35003	558	2770	14910	1351	07326	0551
1500	0421	34978	610	2777	14926	1509	09516	0490
2000	0367	34941	638	2780	14988	1758	13996	0487
2500	0344	34950	631	2782	15064	2005	19757	0487
3000	0310	34943	628	2785	15136	2251	26729	0475
3500	C271	34926	632	2787	15206	2489	34726	0456
4000	C240	34908	630	2789	15280	2719	43666	0443
4500	C227	34906	635	2790	15363	2947	53708	0444

C-REF-NO 002	YR 1966	DEPTH 4910	WAVES 1	XX	AIR T 14.3	VIS 8
CONS. NO 014	MONTH 4	MXSAMPC 49	WAVES 2	XX	WET B 11.7	STN
LAT 40-548N	DAY 24	NO.DPTH 25	WND-DIR 250		WW-CODE 03	
LON 43-029W	HR 05.1	W-COLOR	WND-SPC 07		CLD-TPE 6	
MARSD SQ 149	C/I 1810	W-TRANSP	BARO 1026.0		CLD-AMT 7	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	PO4 -P-	NO2	NO3	SIO	PH
051	0000	1520	36201		2687	15095				024	
051	0050	1484	36114	551	2688	15091				026	
051	0100	1454	36053	551	2690	15089				028	
051	0150	1425	35985	541	2691	15087				033	
051	0201	1434	36012	543	2691	15098				035	
051	0251	1426	36000	551	2692	15104				033	
051	0301	1426	35997	547	2692	15112				033	
051	0402	1420	35987	551	2692	15127				033	
051	0502	1373	35912	546	2697	15127				037	
051	0602	1204	35532	412	2701	15082				084	
051	0701	1037	35329	396	2716	15037				112	
051	0801	0831	35128	381	2735	14975				132	
051	0900	0680	35028	449	2749	14932				120	
051	0999	0588	35034	507	2762	14912				117	
051	1195	0506	35049	565	2773	14911				112	
063	1448	0436	34998	593	2777	14924				126	
063	1941	0380	34963	517	2780	14984				131	
063	2435	0350	34961	607	2783	15055				159	
063	2931	0314	34947	604	2785	15125				192	
063	3429	0272	34927	614	2787	15194				235	
063	3928	0239	34907	611	2789	15267				293	
063	4426	0228	34894	608	2789	15350				331	
063	4525	0227	34892	601	2788	15367				342	
063	4725	0226	34890	607	2788	15402				333	
063	4923	0229	34903	620	2789	15439				230	

#DEPTH OF BOTTOM OBSERVATION GREATER THAN SOUNDING

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
C000	1520	36201	556 D	2687	15095	0000	00000	1190
0010	1513	36184		2687	15094	0012	00001	1190
0020	1506	36167		2688	15093	0024	00002	1190
*C030	1498	36151		2688	15093	0036	00006	1190
C050	1484	36114	551	2688	15091	0060	00015	1193
0075	1469	36082	549	2689	15090	0090	00035	1192
0100	1454	36053	551	2690	15089	0120	00062	1190
0125	1437	36012	546	2691	15087	0150	00096	1192
C150	1425	35985	541	2691	15087	0180	00139	1195
0175	1428	36000	541	2691	15092	0210	00189	1202

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT. EN	SVA
0200	1434	36011	543	2691	15098	0241	00248	1209
0225	1431	36008	547	2692	15101	0271	00314	1212
0250	1426	36000	551	2692	15104	0302	00389	1216
0300	1426	35997	547	2692	15112	0364	00564	1233
0400	1420	35988	551	2692	15126	0489	01016	1258
0500	1375	35915	547	2696	15127	0616	01600	1244
0600	1208	35540	415	2701	15083	0740	02300	1211
0700	1039	35331	396	2716	15037	0855	03068	1074
0800	0833	35130	381	2735	14975	0954	03830	0891
1000	0587	35034	507	2762	14911	1107	05219	0621
1200	0504	35048	566	2773	14911	1223	06518	0520
1500	0427	34992	597	2777	14929	1376	08646	0489
2000	0376	34962	617	2780	14992	1624	13106	0485
2500	0346	34960	606	2783	15065	1870	18824	0482
3000	0308	34944	605	2785	15135	2113	25734	0471
3500	0266	34924	614	2788	15204	2349	33642	0450
4000	0237	34905	609	2789	15279	2577	42496	0440
4500	0227	34892	603	2788	15363	2806	52630	0454

C-REF-NO 002 YR 1966 DEPTH 4900 WAVES 1 XX AIR T 14.6 VIS 8  
 CONS. NO 015 MONTH 4 MXSAMPD 49 WAVES 2 XX WET B 12.9 STN  
 LAT 41-241N DAY 24 NO.DPTH 25 WND-DIR 250 WW-CODE 03  
 LON 42-495W HR 12.1 W-COLOR WND-SPD 07 CLD-TPE 6  
 MARSD SQ 149 C/I 1810 W-TRNSP BARO 1022.6 CLD-AMT 7 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	PO4	-P-	NO2	NO3	SIO	PH
121	0000	1530	36167		2682	15098					021	
121	0050	1506	36158	560	2687	15098					021	
121	0100	1503	36153	558	2687	15105					021	
121	0150	1502	36148	549	2687	15113					020	
121	0200	1505	36154	557	2687	15123					020	
121	0250	1504	36151	559	2687	15130					020	
121	0300	1482	36095	546	2687	15131					026	
121	0401	1430	36005	540	2692	15130					030	
121	0501	1403	35976	558	2695	15137					030	
121	0600	1362	35896	555	2698	15139					035	
121	0700	1060	35349	387	2714	15045					102	
121	0799	0834	35145	391	2736	14976					142	
121	0898	0670	35054	552	2752	14928					133	
121	0997	0593	35064	504	2763	14914					133	
121	1193	0494	35025	569	2772	14906					125	
137	1552	0408	34971	620	2778	14930					119	
137	2010	0371	34956	630	2780	14991					131	
137	2480	0345	34959	620	2783	15061					162	
137	2958	0309	34951	614	2786	15128					208	
137	3444	0269	34927	625	2788	15195					226	
137	3935	0237	34906	620	2789	15267					293	
137	4326	0228	34895	616	2789	15332					313	
137	4519	0226	34892	614	2789	15366					337	
137	4711	0227	34885	612	2788	15400					337	
137	4900	0229	34896	623	2789	15435					280	

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1530	36167	571 D	2682	15098	0000	00000	1236
0010	1525	36165		2683	15098	0012	00001	1230
0020	1520	36163		2684	15098	0025	00003	1224
*0030	1516	36162		2685	15098	0037	00006	1220
0050	1506	36158	560	2687	15098	0062	00016	1207
0075	1503	36155	556	2687	15101	0092	00035	1211
0100	1503	36153	558	2687	15105	0123	00063	1220
0125	1502	36150	553	2687	15109	0153	00098	1229
0150	1502	36148	549	2687	15113	0185	00142	1237
0175	1504	36151	552	2687	15118	0216	00195	1246
0200	1505	36154	557	2687	15123	0247	00255	1255



DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
C225	1506	36156	559	2687	15127	0279	00325	1263
C250	1504	36151	559	2687	15130	0311	00403	1270
0300	1482	36095	546	2687	15131	0375	00584	1279
0400	1430	36006	540	2692	15130	0504	01046	1265
C500	1403	35976	558	2695	15137	0631	01635	1259
C600	1362	35896	555	2698	15139	0758	02354	1260
0700	1060	35349	387	2714	15045	0878	03147	1098
0800	0832	35144	393	2736	14975	0977	03912	0879
1000	0591	35064	504	2764	14913	1128	05274	0605
1200	0491	35024	571	2773	14906	1242	06557	0521
1500	0415	34977	617	2777	14924	1394	08673	0483
2000	0371	34956	630	2780	14990	1640	13102	0483
2500	0344	34959	620	2783	15064	1885	18795	0480
3000	0305	34949	615	2786	15134	2126	25630	0464
3500	0265	34924	625	2788	15203	2358	33449	0446
4000	0235	34904	619	2789	15278	2585	42243	0437
4500	0226	34892	614	2789	15363	2813	52323	0452

C-REF-NO 002	YR 1966	DEPTH 4850	WAVES 1 1420	AIR T 11.6	VIS 8
CONS. NO 016	MONTH 4	MXSAMPC 49	WAVES 2 XX	WET B 10.3	STN
LAT 41-547N	DAY 24	NC.DPTH 24	WND-DIR 140	WW-CODE 03	
LON 42-298W	HR 18.6	W-COLOR	WND-SPC 02	CLD-TPE 6	
MARSD SQ 149	C/I 1810	W-TRANSP	BARO 1017.3	CLD-AMT 8	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	PO4 -P-	NO2	NO3	SIO	PH
186	0000	1440	36007		2690	15067				035	
186	0050	1423	36006	562	2693	15070				032	
186	0100	1420	35990	552	2693	15077				032	
186	0150	1419	35980	551	2692	15085				032	
186	0201	1420	35985	557	2692	15093				032	
186	0250	1408	35960	546	2693	15097				035	
186	0300	1381	35897	526	2694	15096				038	
186	0399	1354	35897	562	2699	15103				036	
186	0497	1195	35536	436	2703	15061				079	
186	0595	1011	35297	379	2718	15009				123	
186	0693	0827	35120	380	2735	14955				150	
186	0791	0704	35096	441	2751	14924				143	
186	0889	0597	35020	499	2759	14897				138	
186	0987	0548	35053	531	2768	14894				133	
186	1189	0471	35016	531	2774	14895				126	
202	1539	0391	34941	631	2777	14920				117	
202	2012	0360	34935	636	2780	14987				126	
202	2490	0333	34949	624	2783	15057				152	
202	2971	0301	34949	618	2787	15127				215	
202	3458	0261	34922	625	2788	15194				221	
202	3951	0234	34902	622	2789	15269				299	
202	4451	0226	34889	617	2788	15353				338	
202	4653	0226	34890	620	2788	15389				331	
202	4857	0228									

\*DEPTH OF BOTTOM OBSERVATION GREATER THAN SOUNDING

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1440	36007	580 C	2690	15067	0000	00000	1165
0010	1436	36006		2690	15068	0012	00001	1161
0020	1433	36006		2691	15068	0023	00002	1157
*0030	1430	36005		2692	15069	0035	00005	1155
0050	1423	36006	562	2693	15070	0058	00015	1146
0075	1421	35999	556	2693	15073	0087	00034	1154
0100	1420	35990	552	2693	15077	0116	00060	1166
0125	1419	35984	551	2692	15081	0146	00094	1177
0150	1419	35980	551	2692	15085	0176	00136	1186
0175	1420	35983	555	2692	15089	0206	00186	1194
0200	1420	35985	557	2692	15093	0236	00244	1200

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
C225	1416	35977	553	2693	15096	0266	00310	1204
C250	1408	35960	546	2693	15097	0297	00385	1208
C300	1381	35897	526	2694	15096	0358	00557	1213
0400	1353	35894	561	2699	15103	0479	00992	1187
C500	1190	35527	433	2704	15060	0597	01539	1160
C600	1001	35285	378	2719	15006	0707	02158	1018
0700	0817	35117	383	2736	14952	0802	02786	0856
0800	0693	35088	447	2752	14921	0881	03391	0704
1000	C542	35053	532	2769	14893	1007	04546	0545
1200	0468	35013	534	2774	14896	1113	05736	0496
1500	0397	34948	619 B	2777	14916	1261	07799	0480
2000	0360	34934	637	2780	14985	1506	12218	0483
2500	0332	34949	624	2784	15059	1749	17849	0470
3000	0299	34948	618	2787	15131	1985	24547	0454
3500	0258	34920	625	2788	15200	2213	32223	0439
4000	C233	34900	621	2789	15277	2437	40936	0436
4500	C226	34890	619	2788	15362	2666	51019	0453

C-REF-NO 002 YR 1966 DEPTH 4850 WAVES 1 3022 AIR T 11.4 VIS 7  
 CONS. NO 017 MONTH 4 MXSAMPD 49 WAVES 2 XX WET B 11.0 STN  
 LAT 42-202N DAY 25 NO.DPTH 24 WND-DIR 300 WW-CODE 50  
 LON 42-141W HR 00.4 W-COLOR WND-SPD 05 CLD-TPE 7  
 MARSD SQ 149 C/I 1810 W-TRNSP BARO 1017.2 CLD-AMT 8 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	PO4	-P-	NO2	NO3	SIO	PH
004	0000	1420	36031		2696	15061					C29	
004	0049	1421	36000	553	2693	15069					030	
004	0097	1427	36019	557	2693	15079					030	
004	0146	1425	36014	551	2693	15086					C29	
004	0195	1423	36014	551	2694	15094					C29	
004	0243	1418	36002	549	2694	15100					C29	
004	0292	1412	35990	547	2694	15106					032	
004	0390	1300	35739	509	2698	15082					051	
004	0488	1114	35408	385	2709	15030					102	
004	0587	0945	35221	373	2724	14983					132	
004	0685	0773	35113	412	2742	14933					144	
004	0784	0705	35136	442	2754	14923					144	
004	0884	0581	35049	510	2764	14890					144	
004	0984	0539	35073	543	2771	14890					132	
004	1184	0441	34982	609	2775	14882					118	
019	1502	0398	34953	630	2777	14917					115	
019	1982	0365	34947	637	2780	14984					127	
019	2466	0338	34947	626	2783	15055					158	
019	2955	0304	34941	630	2786	15125					180	
019	3449	0269	34928	632	2788	15196					212	
019	3949	0238	34911	632	2789	15270					255	
019	4453	0227	34901	632	2789	15354					274	
019	4655	0226	34897	642	2789	15390					242	
019	4857	0227	34903	648	2789	15426					200	

#DEPTH OF BOTTOM OBSERVATION GREATER THAN SOUNDING

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1420	36031	550 C	2696	15061	0000	00000	1106
0010	1421	36026		2695	15063	0011	00001	1115
0020	1421	3602 B		2695	15065	0022	00002	1122
*0030	1422	3602 B		2694	15067	0034	00005	1129
0050	1421	36000	553	2693	15069	0057	00015	1146
0075	1424	36009	554	2693	15075	0086	00033	1154
0100	1427	36019	557	2693	15080	0115	00059	1159
0125	1426	36017	554	2693	15083	0144	00093	1167
0150	1425	36014	551	2693	15087	0174	00135	1174
0175	1424	36014	551	2694	15091	0203	00185	1179
0200	1423	36013	551	2694	15094	0233	00242	1185



DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0225	1420	36007	550	2694	15098	0263	00307	1191
0250	1418	36003	549	2694	15101	0293	00381	1198
0300	1407	35977	546	2694	15105	0354	00552	1208
0400	1282	35704	496 B	2699	15077	0475	00986	1184
0500	1093	35379	379	2710	15024	0589	01514	1090
0600	0919	35201	377	2726	14975	0692	02091	0941
0700	0761 B	3512 B	416	2744	14931	0778	02665	0770
0800	0684 B	3512 B	453	2756	14918	0851	03223	0667
1000	0530	35068	549	2771	14889	0971	04318	0517
1200	0437	34979	611	2775	14883	1072	05461	0482
1500	0398	34953	630	2777	14916	1218	07491	0478
2000	0364	34947	637	2780	14987	1461	11881	0479
2500	0336	34947	626	2783	15060	1705	17536	0477
3000	0301	34940	630	2786	15132	1945	24347	0463
3500	0265	34926	632	2788	15203	2177	32160	0446
4000	0236	34910	631	2789	15279	2403	40932	0435
4500	0227	34900	634	2789	15363	2630	50942	0448

C-REF-NO 002 YR 1966 DEPTH 4850 WAVES 1 0325 AIR T 10.7 VIS 8  
 CONS. NO 018 MONTH 4 MXSAMPD 48 WAVES 2 0149 WET B 08.5 STN  
 LAT 42-458N DAY 25 NC.DPTH 24 WND-DIR 030 WW-CODE 01  
 LON 41-580W HR 06.9 W-COLOR WND-SPD 09 CLD-TPE 8  
 MARSD SQ 149 C/I 1810 W-TRNSP BARO 1018.0 CLD-AMT 7 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	PO4	-P-	NO2	NO3	SIO	PH
069	0000	1325	35895		2705	15028					040	
069	0048	1345	35884	578	2700	15043					041	
069	0092	1345	35881	572	2700	15050					043	
069	0137	1342	35882	570	2701	15056					043	
069	0180	1341	35897	572	2702	15063					038	
069	0223	1337	35875	567	2701	15069					043	
069	0265	1332	35862	555	2701	15074					043	
069	0349	1282		530							050	
069	0435	1063	35362	395	2714	15003					107	
069	0523	0904	35178	370	2727	14957					139	
069	0616	0776	35077	405	2739	14922					145	
069	0712	0632	34998	467	2753	14881					142	
069	0813	0551	35001	525	2764	14865					137	
069	0918	0513	35022	551	2770	14867					131	
069	1139	0469	35028	583	2775	14886					130	
084	1467	0392	34951	634	2778	14908					120	
084	1955	0362	34946	635	2780	14978					131	
084	2444	0337	34950	630	2783	15051					175	
084	2934	0302	34942	630	2786	15120					212	
084	3429	0271	34934	633	2788	15193					212	
084	3926	0236	34909	629	2789	15265					268	
084	4431	0228	34900	630	2789	15351					288	
084	4634	0226	34898	630	2789	15386					288	
084	4838	0228	34905	641	2789	15424					252	

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
C000	1325	35895	589 C	2705	15028	0000	00000	1017
C010	1330	35892		2704	15031	0010	00001	1031
C020	1334	35890		2703	15034	0021	00002	1044
*0030	1337	35888		2702	15037	0031	00005	1055
C050	1345	35884	578	2700	15043	0053	00014	1079
C075	1346	35882	574	2700	15047	0080	00031	1090
C100	1345	35880	571	2700	15051	0108	00056	1094
0125	1343	35881	570	2700	15054	0135	00088	1098
C150	1342	35888	571	2701	15058	0163	00127	1098
0175	1341	35896	572	2702	15062	0191	00173	1098
C200	1339	35889	571	2702	15066	0218	00227	1107
C225	1337	35875	567	2701	15069	0247	00288	1119

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0250	1335	35869	560	2701	15072	0275	00357	1126
0300	1324 B	3578 H	551 B	2697	15076	0333	00522	1184
0400	1159 E	3549 H	450 D	2706	15032	0449	00936	1107
0500	0941	35219	368	2724	14967	0552	01410	0942
0600	0797	35090	396	2737	14928	0641	01913	0827
0700	0649	35005	459	2751	14886	0718	02420	0686
0800	0558	34998	519	2762	14866	0782	02912	0581
1000	0494	35030	565	2773	14874	0891	03915	0497
1200	0453	3502 H	594	2776	14890	0990	05030	0476
1500	0388	34948	636	2778	14912	1134	07028	0468
2000	0360	34946	635	2781	14985	1373	11352	0474
2500	0333	34949	630	2783	15059	1614	16942	0471
3000	0298	34941	631	2786	15130	1851	23673	0458
3500	0265	34930	632	2788	15203	2081	31415	0443
4000	0234	34907	629	2789	15278	2306	40139	0433
4500	0227	34899	629	2789	15363	2532	50146	0449

C-REF-NO 002 YR 1966 DEPTH 4800 WAVES 1 0325 AIR T 11.3 VIS 8  
 CONS. NO 019 MONTH 4 MXSAMP 49 WAVES 2 0748 WET 8 07.6 STN  
 LAT 43-203N DAY 25 NO.DPTH 25 WND-DIR 030 WW-CODE 01  
 LON 41-449W HR 13.0 W-COLOR WND-SPD 12 CLD-TPE 8  
 MARSD SQ 149 C/I 1810 W-TRANSP BARO 1019.8 CLD-AMT 5 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	PO4 -P-	NO2	NO3	SIO	PH
130	0000	1330	35852		2701	15029				041	
130	0050	1342	35852	579	2698	15042				040	
130	0100	1344	35845	577	2697	15050				040	
130	0150	1348	35884	568	2700	15060				039	
130	0200	1350	35898	567	2700	15069				038	
130	0248	1347	35896	562	2701	15076				041	
130	0298	1345	35894	556	2701	15084				041	
130	0396	1342	35893	556	2702	15099				041	
130	0493	1265	35727	520	2704	15087				058	
130	0589	1017	35307	390	2718	15011				122	
130	0686	0830	35131	388	2735	14955				152	
130	0782	0652	35018	461	2752	14901				148	
130	0879	0623	35085	489	2761	14906				142	
130	0977	0542	35037	536	2768	14889				136	
130	1179	0452	34990	595	2774	14886				126	
144	1443	0415	34982	614	2778	14914				127	
144	1934	0369	34939	633	2779	14977				131	
144	2429	0345	34947	626	2782	15052				149	
144	2926	0311	34944	632	2785	15123				167	
144	3422	0275	34935	629	2788	15194				206	
144	3917	0244	34915	629	2789	15267				252	
144	4211	0235	34906	624	2789	15315				272	
144	4504	0229	34906	629	2789	15364				262	
144	4698	0226	34913	642	2790	15398				189	
144	4891	0226	34911	649	2790	15432				184	

\*DEPTH OF BOTTOM OBSERVATION GREATER THAN SOUNDING

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1330	35852	584 C	2701	15029	0000	00000	1058
0010	1332	35849		2700	15032	0011	00001	1068
0020	1334	35846		2700	15034	0022	00002	1077
*0030	1336	3584 B		2699	15036	0032	00005	1085
0050	1342	35852	579	2698	15042	0054	00014	1096
0075	1344	35846	577	2698	15046	0082	00032	1110
0100	1344	35845	577	2697	15050	0110	00057	1119
0125	1346	35863	572	2698	15055	0138	00090	1117
0150	1348	35884	568	2700	15060	0167	00129	1113
0175	1349	35894	567	2700	15065	0195	00176	1116



DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0200	1350	35898	567	2700	15069	0223	00231	1121
0225	1349	35898	565	2701	15073	0251	00293	1126
0250	1347	35896	562	2701	15077	0280	00362	1131
0300	1345	35895	556	2701	15084	0337	00524	1143
0400	1341	35890	556	2702	15099	0453	00944	1166
0500	1249 B	3570 B	510 B	2705	15082	0570	01484	1151
0600	0994	35279	385	2720	15004	0680	02098	1010
0700	0799 B	35107	398 B	2738	14946	0773	02717	0835
0800	0643 C	3503 C	467	2754	14900	0849	03303	0676
1000	0528	35029	545	2769	14887	0973	04431	0543
1200	0447	34988	598	2775	14887	1077	05608	0488
1500	0408	34977	617	2778	14921	1223	07642	0474
2000	0365	34939	632	2779	14987	1468	12059	0487
2500	0341	34947	627	2783	15062	1715	17800	0484
3000	0306	34943	632	2786	15134	1958	24696	0468
3500	0269	34932	629	2788	15205	2192	32571	0449
4000	0241	34912	627	2789	15281	2420	41434	0442
4500	0229	34906	629	2789	15364	2649	51514	0448

C-REF-NO 002	YR 1966	DEPTH 1820	WAVES 1 1922	AIR T 14.8	VIS 8
CONS. NO 020	MONTH 4	MXSAMP 18	WAVES 2 3523	WET B 13.3	STN
LAT 39-387N	DAY 27	NO.DPTH 18	WND-DIR 170	WW-CODE 03	
LON 31-351W	HR 07.0	W-COLOR	WND-SPC 05	CLD-TPE 7	
MARSD SQ 112	C/I 1810	W-TRNSP	BARO 1024.5	CLD-AMT 7	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	PO4 -P-	NO2	NO3	SIO	PH
070	0000	1540	36108		2675	15100				016	
070	0050	1537	36099	568	2675	15107				019	
070	0100	1535	36097	567	2676	15115				019	
070	0151	1495	36051	539	2681	15110				023	
070	0201	1448	35989	538	2687	15103				027	
070	0251	1421	35957	547	2690	15102				029	
070	0302	1408	35941	551	2691	15106				030	
070	0403	1363	35871	545	2696	15107				033	
070	0504	1340	35850	558	2699	15115				033	
070	0604	1290	35749	530	2701	15114				045	
070	0703	1143	35511	468	2711	15077				073	
086	0786	1021	35377	420	2723	15046				104	
086	0885	0878	35359	423	2745	15009				123	
086	0983	0705	35198	468	2759	14957				133	
086	1179	0604	35186	520	2772	14950				133	
086	1373	0540	35141	546	2776	14956				135	
086	1569	0480	35075	577	2778	14964				132	
086	1773	0434									

\*TIME-DISTANCE CHECK FAILED

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1540	36108	578 G	2675	15100	0000	00000	1300
0010	1542	36109		2675	15102	0013	00001	1307
0020	1543	36110		2675	15105	0026	00003	1313
*0030	1544 B	36110		2675	15106	0040	00006	1318
0050	1537	36099	568	2675	15107	0066	00017	1316
0075	1538	36100	563 B	2675	15112	0099	00038	1326
0100	1535	36097	567	2676	15115	0133	00068	1329
0125	1518	36078	553	2678	15113	0166	00107	1315
0150	1496	36052	540	2681	15110	0199	00153	1294
0175	1472	36020	536	2684	15106	0231	00207	1274
0200	1449	35990	538	2686	15103	0263	00269	1256
0225	1433	35971	542	2688	15101	0295	00337	1244
0250	1421	35957	547	2690	15102	0326	00414	1237
0300	1408	35942	551	2691	15105	0388	00590	1237
0400	1364	35873	545	2695	15107	0513	01037	1225
0500	1341	35851	558	2699	15115	0636	01608	1222
0600	1293	35755	532	2701	15114	0760	02306	1222

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0700	1148	35519	470	2711	15078	0879	03100	1138
0800	1002	3537 B	417	2726	15041	0987	03930	0998
1000	0689 B	3519 B	474	2760	14954	1154	05444	0656
1200	0596	35182	523	2772	14950	1277	06819	0552
1500	0500	35102	569	2778	14961	1438	09055	0509

C-REF-NO 002	YR 1966	DEPTH 1980	WAVES 1 1922	AIR T 16.3	VIS 8
CONS. NO 021	MONTH 4	MXSAMP 20	WAVES 2 3522	WET B 14.1	STN
LAT 39-428N	DAY 27	NO.DPTH 19	WND-DIR 190	WW-CODE 03	
LON 32-331W	HR 13.0	W-COLOR	WND-SPC 06	CLD-TPE 8	
MARSC SQ 112	C/I 1810	W-TRNSP	BARO 1025.5	CLD-AMT 7	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	PO4 -P-	NO2	NO3	SIO	PH
131	0000	1530	36021		2671	15096				021	
131	0049	1481	36012	578	2681	15088				021	
131	0097	1470	36037	560	2685	15093				021	
131	0146	1395	35914	536	2692	15075				032	
131	0196	1356	35839	520	2695	15070				043	
131	0245	1332	35800	518	2696	15070				046	
131	0295	1300	35756	515	2700	15067				060	
131	0393	1217	35612	487	2705	15053				089	
131	0492	1089	35439	437	2716	15022				114	
131	0591	0967	35321	416	2728	14993				136	
131	0691	0812	35179	421	2742	14950				136	
138	0786	0790	35290	438	2754	14959				136	
138	0885	0695	35239	473	2763	14938				136	
138	0983	0674	35273	492	2769	14946				133	
138	1181	0578	35198	538	2776	14940				133	
138	1379	0465	35041	588	2777	14925				130	
138	1578	0425	35010	605	2779	14942				133	
138	1779	0390	34980	618	2780	14960				142	
138	1978	0350	34962	621	2783	14977				163	

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1530	36021	600 C	2671	15096	0000	00000	1343
0010	1524 B	3603 B		2673	15096	0013	00001	1327
0020	1518 C	3604 D		2675	15096	0027	00003	1313
*0030	1512 D	3604 E		2677	15095	0040	00006	1299
0050	1481	36013	578	2681	15089	0066	00017	1260
0075	1477 B	3603 C	567	2684	15092	0097	00037	1245
0100	1466	36031	558	2686	15092	0128	00065	1231
0125	1429 B	3597 C	546	2689	15084	0159	00100	1204
0150	1391	35906	534	2692	15075	0189	00143	1183
0175	1369	35865	525	2694	15071	0219	00192	1176
0200	1354	35835	520	2695	15070	0249	00249	1175
0225	1341	35814	518	2696	15070	0278	00314	1172
0250	1329	35796	518	2697	15069	0308	00386	1168
0300	1297	35750	514	2700	15066	0366	00551	1152
0400	1209	35599	483	2706	15051	0481	00962	1118
0500	1080	35429	434	2716	15020	0589	01461	1029
0600	0951	3530 B	416	2729	14988	0687	02015	0919



DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0700	0809 B	3519 B	422	2743	14950	0774	02590	0791
0800	0777 B	3529 B	443	2755	14956	0849	03164	0687
1000	0667	35272	496	2770	14946	0975	04323	0563
1200	0566	35182	543	2776	14938	1084	05548	0509
1500	0436 B	3502 B	601	2778	14933	1235	07643	0484

C-REF-NO 002 YR 1966 DEPTH 3400 WAVES 1 2222 AIR T 15.9 VIS 8  
 CONS. NO 022 MONTH 4 MXSAMPC 34 WAVES 2 XX WET B 13.7 STN  
 LAT 39-469N DAY 27 NO.DPTH 21 WND-DIR 220 WW-CODE 03  
 LON 33-283W HR 18.3 W-COLOR WND-SPC 08 CLD-TPE 3  
 MARSD SQ 112 C/I 1810 W-TRANSP BARO 1023.2 CLD-AMT 2 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	PO4 -P-	NO2	NO3	SIO	PH
183	0000	1530	36071		2675	15097				024	
183	0050	1475	36027	571	2684	15087				024	
183	0100	1445	36005	552	2688	15085				029	
183	0151	1422	35956	563	2690	15086				029	
183	0202	1403	35924	567	2691	15087				029	
183	0251	1371	35865	547	2693	15084				036	
183	0302	1340	35850	562	2699	15082				036	
183	0403	1315	35820	556	2702	15090				037	
183	0503	1252	35683	525	2704	15084				049	
183	0604	1111	35454	458	2713	15049				084	
183	0703	0973	35338	426	2728	15014				111	
183	0803	0851	35255	421	2742	14984				127	
183	0903	0724	35204	461	2757	14952				136	
183	1002	0671	35219	487	2765	14947				135	
183	1202	0534	35106	547	2774	14925				131	
192	1486	0428	34997	604	2778	14927				130	
192	1987	0365	34955	627	2781	14985				141	
192	2490	0321		624						170	
192	2991	0279	34929	619	2787	15120				232	
192	3191	0265	34921	617	2788	15149				250	
192	3391	0257	34917	615	2788	15180				266	

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1530	36071	595 E	2675	15097	0000	00000	1306
0010	1518	36064		2677	15094	0013	00001	1290
0020	1507	36057		2679	15092	0026	00003	1274
*0030	1497	36050		2681	15091	0039	00006	1261
0050	1475	36027	571	2684	15087	0064	00016	1238
0075	1458	36016	563	2686	15085	0095	00036	1218
0100	1445	36005	552	2688	15085	0125	00063	1207
0125	1433	35982	556	2689	15085	0156	00099	1207
0150	1422	35957	563	2690	15086	0186	00142	1210
0175	1414	35942	567	2690	15087	0217	00193	1211
0200	1404	35925	567	2691	15087	0247	00251	1210
0225	1389	35895	557	2692	15086	0278	00318	1208
0250	1372	35866	547	2693	15084	0308	00392	1202
0300	1341	35850	561	2698	15082	0368	00561	1167
0400	1316	35822	557	2701	15090	0486	00984	1164

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
C500	1255	35689	526	2703	15084	0603	01528	1168
C600	1117	35463	461	2712	15050	0718	02173	1097
0700	0977	35340	427	2728	15015	0821	02864	0958
0800	0855	35257	421	2741	14985	0912	03559	0833
1000	0672	35219	487	2765	14947	1058	04886	0609
1200	C535	35108	546	2774	14925	1172	06172	0520
1500	0425	34994	605	2778	14928	1325	08288	0484
2000	0364	34955	627	2781	14987	1568	12669	0473
2500	0320	3494 B	624	2784	15054	1805	18173	0459
3000	C278	34929	619	2787	15122	2034	24656	0437

C-REF-NO 002 YR 1966 DEPTH 4150 WAVES 1 2124 AIR T 16.0 VIS 8  
 CONS. NO 023 MONTH 4 MXSAMPD 41 WAVES 2 3435 WET B 15.0 STN  
 LAT 39-521N DAY 28 NC.DPTH 23 WND-DIR 220 WW-CODE 03  
 LON 34-513W HR 01.6 W-COLOR WND-SPC 11 CLD-TPE 7  
 MARSD SQ 112 C/I 1810 W-TRNSP BARO 1021.8 CLD-AMT 8 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	PO4 -P-	NO2	NO3	SIO	PH
016	0000	1530	36036		2672	15096				026	
016	0050	1491	36017	572	2679	15092				026	
016	0100	1454	36008	562	2687	15088				026	
016	0150	1446	35997	558	2688	15094				026	
016	0200	1415	35955	546	2691	15091				030	
016	0250	1388	35904	538	2693	15090				035	
016	0300	1335	35794	499	2695	15080				047	
016	0399	1237	35627	463	2702	15061				062	
016	0499	1123	35503	437	2714	15036				083	
016	0598	0971	35318	400	2727	14996				117	
016	0698	0837	35225	412	2741	14961				136	
016	0798	0722	35159	443	2753	14933				139	
016	0898	0725	35326	475	2766	14953				133	
016	0999	0606	35172	518	2770	14921				133	
016	1201	0532	35161	556	2779	14924				133	
027	1377	0444	35026	595	2778	14916				130	
027	1860	0370	34961	624	2781	14966				137	
027	2351	0333	34956	618	2784	15034				166	
027	2848	0296	34942	619	2786	15103				211	
027	3348	0259	34925	617	2788	15174				270	
027	3749	0241	34909	615	2789	15236				293	
027	3947	0240	34908	620	2789	15271				301	
027	4143	0238	34910	613	2789	15304					

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1530	36036	579 C	2672	15096	0000	00000	1332
0010	1520	36032		2674	15095	0013	00001	1316
0020	1511	36029		2676	15093	0027	00003	1302
*0030	1502	36025		2677	15092	0040	00006	1290
0050	1491	36017	572	2679	15092	0065	00017	1279
0075	1471	36012	568	2683	15089	0097	00037	1247
0100	1454	36008	562	2687	15088	0128	00065	1223
0125	1450	36005	560	2687	15091	0159	00101	1224
0150	1446	35997	558	2688	15094	0190	00144	1230
0175	1432	35979	552	2689	15093	0221	00196	1221
0200	1415	35955	546	2691	15091	0252	00255	1211
0225	1403	35934	544	2692	15091	0282	00321	1209
0250	1388	35904	538	2693	15090	0313	00396	1208

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0300	1335	35794	499	2695	15080	0373	00567	1195
0400	1236	35626	463	2702	15061	0492	00992	1151
0500	1122	35501	437	2714	15036	0603	01504	1052
0600	0968	35316	400	2727	14995	0704	02070	0939
0700	0834	35222	413	2742	14960	0792	02656	0806
0800	0722	35163	444	2754	14933	0868	03238	0693
1000	0605	35172	518	2770	14921	0993	04384	0546
1200	0532	35161	556	2779	14924	1097	05550	0476
1500	0412 C	3499 D	609 B	2778	14923	1241	07558	0473
2000	0357	34957	624	2782	14984	1479	11841	0463
2500	0322	34952	618	2785	15054	1712	17251	0453
3000	0284	34937	619	2787	15124	1939	23714	0439
3500	0250	34918	615	2789	15197	2161	31171	0428
4000	0238	34908	616	2789	15279	2384	39828	0440



C-REF-NO 002 YR 1966 DEPTH 4600 WAVES 1 2524 AIR T 15.2 VIS 7  
 CONS. NO 024 MONTH 4 MXSAMPC 46 WAVES 2 2956 WET B 12.8 STN  
 LAT 39-585N DAY 28 NO.DPTH 24 WND-DIR 250 WW-CODE 03  
 LON 36-111W HR 09.4 W-COLOR WND-SPC 10 CLD-TPE 7  
 MARSD SQ 112 C/I 1810 W-TRNSP BARO 1019.7 CLD-AMT 7 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	PO4	-P-	NO2	NO3	SIO	PH
094	0000	1490	36089		2685	15084					079	
094	0050	1473	36025	574	2684	15086					024	
094	0100	1468	36029	567	2685	15093					025	
094	0150	1450	36005	550	2687	15095					027	
094	0201	1419	35943	527	2689	15093					034	
094	0251	1406	35934	541	2691	15096					033	
094	0302	1366	35844	505	2693	15091					042	
094	0402	1259	35665	473	2701	15069					059	
094	0502	1130	35457	443	2709	15039					088	
094	0602	0964	35317	385	2728	14994					124	
094	0701	0822	35194	406	2741	14956					145	
094	0800	0740	35183	441	2753	14940					136	
094	0899	0655	35145	478	2762	14923					142	
094	0998	0624	35207	510	2771	14928					137	
094	1197	0525	35136	558	2777	14920					132	
124	1427	0437	35023	597	2779	14921					129	
124	1915	0363	34960	626	2781	14972					138	
124	2409	0332	34959	624	2784	15043					167	
124	2908	0293	34943	615	2787	15112					224	
124	3411	0251	34921	619	2789	15181					293	
124	3916	0235	34911	616	2789	15263					305	
124	4216	0233	34906	619	2789	15315					300	
124	4415	0233	34909	624	2789	15350					300	
124	4611	0235	34912	615	2789	15386					305	

\*DEPTH OF BOTTOM OBSERVATION GREATER THAN SOUNDING

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1490	36089	574 C	2685	15084	0000	00000	1208
0010	1487	36078		2685	15085	0012	00001	1214
0020	1485	3607 B		2685	15086	0024	00003	1220
*0030	1482	3606 C		2684	15086	0037	00006	1225
0050	1473	36025	574	2684	15086	0062	00016	1235
0075	1471	3603 B	571	2684	15089	0093	00036	1238
0100	1468	36029	567	2685	15093	0124	00064	1237
0125	1461	36021	559	2686	15094	0155	00100	1235
0150	1450	36005	550	2687	15095	0186	00144	1232
0175	1434	35974	537	2688	15094	0217	00196	1230
0200	1420	35944	527	2689	15093	0248	00255	1229

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0225	1413	3594 B	535 B	2690	15095	0279	00323	1226
0250	1406	35934	541	2691	15096	0310	00398	1223
0300	1368	35848	507	2693	15091	0372	00572	1222
0400	1261	35669	473	2701	15070	0492	01005	1169
0500	1133	35461	444	2709	15039	0607	01534	1103
0600	0967	35319	386	2728	14995	0710	02111	0935
0700	0823	35195	406	2741	14956	0798	02697	0809
0800	0740	35183	441	2753	14940	0875	03286	0706
1000	0623	35207	511	2771	14928	1001	04442	0545
1200	0524	35134	559	2777	14920	1105	05617	0484
1500	0420 B	3500 B	605	2779	14926	1251	07631	0470
2000	0356	34958	627	2782	14984	1487	11890	0460
2500	0325	34957	622	2785	15056	1720	17299	0454
3000	0284	34939	616	2787	15125	1948	23771	0439
3500	0247	34919	618	2789	15195	2168	31167	0422
4000	0234	34909	616	2789	15278	2387	39681	0432
4500	0234	34909	619	2789	15366	2614	49730	0454

C-REF-NO 002 YR 1966 DEPTH 4370 WAVES 1 2524 AIR T 15.3 VIS 8  
 CONS. NO 025 MONTH 4 MXSAMPC 43 WAVES 2 2957 WET B 10.4 STN  
 LAT 40-026N DAY 28 NO.DPTH 23 WND-DIR 250 WW-CODE 03  
 LON 37-187W HR 18.7 W-COLOR WND-SPC 11 CLD-TPE 6  
 MARSD SQ 148 C/I 1810 W-TRANSP BARO 1017.4 CLD-AMT 7 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	PO4	-P-	NO2	NO3	SIO	PH
187	0000	1450	35971		2685	15070					038	
187	0050	1413	35983	574	2694	15066					032	
187	0098	1406	35971	567	2694	15072					032	
187	0148	1403	35973	562	2695	15079					032	
187	0197	1402	35973	562	2695	15087					032	
187	0245	1354	35869	552	2697	15078					038	
187	0294	1330	35821	551	2699	15077					038	
187	0390	1317	35794	553	2699	15088					041	
187	0486	1273	35712	546	2702	15088					048	
187	0582	1100	35413	411	2712	15041					102	
187	0679	0881	35150	393	2729	14974					136	
187	0776	0760	35100	420	2743	14943					144	
187	0874	0721	35215	510	2758	14946					140	
187	0973	0663	35221	499	2766	14940					136	
187	1179	0541	35119	548	2774	14924					132	
206	1472	0410	34973	615	2778	14917					126	
206	1956	0364	34949	630	2780	14979					136	
206	2446	0333	34978	620	2786	15050					175	
206	2937	0296	34943	620	2786	15118					217	
206	3430	0260	34923	620	2788	15189					269	
206	3926	0235	34903	622	2789	15265					299	
206	4125	0233	34906	620	2789	15299					299	
206	4326	0231	34904	620	2789	15334					299	

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1450	35971	585	2685	15070	0000	00000	1212
0010	1442	35973		2687	15069	0012	00001	1197
0020	1435	35974		2688	15068	0024	00002	1184
*0030	1428	35975		2690	15068	0036	00006	1173
0050	1413	35983	574	2694	15066	0059	00015	1142
0075	1407	35977	570	2694	15069	0088	00034	1142
0100	1406	35971	567	2694	15072	0117	00060	1151
0125	1404	35971	564	2695	15076	0146	00093	1155
0150	1403	35974	562	2695	15080	0175	00134	1159
0175	1405	35988	562	2695	15084	0205	00183	1166
0200	1399	35967	561	2695	15086	0234	00240	1170
0225	1375	35928	556	2696	15082	0263	00304	1167
0250	1351	35862	552	2697	15077	0293	00376	1163

DEPTH	T E M P	S A L	COXYGEN	SGMT	SOUND	DELTA-D	POT. EN	SVA
0300	1329	35819	551	2699	15078	0352	00542	1165
0400	1316	35792	555	2699	15090	0470	00969	1187
0500	1253	3567 B	527 C	2703	15083	0589	01521	1176
0600	1057 B	3536 B	401	2715	15028	0703	02158	1067
0700	0847	35123	394	2732	14964	0802	02818	0900
0800	0747 B	3513 C	444 C	2747	14943	0886	03462	0759
1000	0646	35212	503	2768	14937	1021	04694	0576
1200	0529	35107	554	2775	14922	1131	05936	0512
1500	0404	34967	618	2778	14919	1282	08019	0476
2000	0361	34952	629	2781	14986	1522	12360	0471
2500	0329	34975	620	2786	15058	1756	17775	0447
3000	0291	34940	620	2787	15127	1984	24268	0448
3500	0255	34919	621	2788	15199	2210	31862	0435
4000	0234	34904	621	2789	15278	2434	40537	0435

C-REF-NO 002 YR 1966 DEPTH 4520 WAVES 1 2923 AIR T 10.8 VIS 8  
 CONS. NO 026 MONTH 4 MXSAMP 46 WAVES 2 2846 WET B 08.2 STN  
 LAT 40-056N DAY 29 NC.DPT 24 WND-DIR 290 WW-CODE 01  
 LON 38-445W HR 03.8 W-COLOR WND-SPD 14 CLD-TPE 8  
 MARSD SQ 148 C/I 1810 W-TRNSP BARO 1016.0 CLD-AMT 6 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	PO4	-P-	NO2	NO3	SIO	PH
038	0000	1580	36240		2676	15114					022	
038	0050	1557	36194	567	2678	15115					024	
038	0100	1546	36173	556	2679	15119					024	
038	0151	1478	36059	576	2685	15105					028	
038	0202	1454	36031	577	2688	15105					028	
038	0252	1449	36028	560	2689	15112					028	
038	0303	1447	36024	562	2689	15119					028	
038	0403	1405	35937	536	2692	15121					034	
038	0503	1330	35824	547	2699	15112					043	
038	0603	1237	35648	474	2704	15095					062	
038	0702	1081	35479	434	2720	15055					091	
038	0800	0976	35433	421	2735	15032					113	
038	0899	0839	35291	422	2746	14996					136	
038	0999	0768	35310	452	2758	14986					133	
038	1202	0562	35113	534	2771	14936					133	
052	1495	0437	35000	603	2777	14932					126	
052	1986	0374	34961	625	2780	14989					136	
052	2480	0338	34958	620	2784	15058					168	
052	2979	0302	34950	624	2786	15128					192	
052	3478	0265	34939	620	2789	15199					249	
052	3979	0234	34917	624	2790	15274					293	
052	4179	0229	34903	620	2789	15307					299	
052	4379	0229	34910	624	2790	15342					299	
052	4578	0229	34918	624	2790	15378					296	

\*DEPTH OF BOTTOM OBSERVATION GREATER THAN SOUNDING

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1580	36240	576 F	2676	15114	0000	00000	1290
0010	1579	36237		2676	15116	0013	00001	1294
0020	1578 B	3623 B		2676	15117	0026	00003	1297
*0030	1576 C	3623 C		2677	15118	0039	00006	1299
0050	1557	36194	567	2678	15115	0065	00017	1290
0075	1554 B	3619 B	565 B	2678	15118	0098	00038	1297
0100	1546	36173	556	2679	15119	0131	00067	1298
0125	1514 B	3612 C	565	2682	15112	0163	00104	1276
0150	1479	36061	576	2685	15105	0195	00149	1253
0175	1463	36039	579	2687	15104	0226	00202	1242
0200	1454	36031	577	2688	15105	0257	00262	1237



DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0225	1450	36028	569	2689	15108	0289	00330	1239
0250	1449	36028	561	2689	15111	0320	00407	1244
0300	1447	36025	562	2689	15119	0383	00585	1257
0400	1407	35941	537	2692	15121	0510	01042	1264
0500	1333	35828	547	2699	15112	0636	01621	1222
0600	1240	35654	477	2704	15095	0757	02310	1192
0700	1084	35482	435	2720	15055	0871	03062	1046
0800	0976	35433	421	2735	15032	0969	03821	0910
1000	0767	35309	452	2759	14986	1131	05296	0689
1200	0564	35115	533	2771	14936	1257	06709	0555
1500	0436	34999	604	2777	14933	1417	08917	0495
2000	0373	34961	625	2780	14991	1665	13385	0481
2500	0337	34958	620	2784	15061	1907	19008	0470
3000	0300	34950	624	2787	15131	2144	25716	0456
3500	0263	34938	620	2789	15203	2371	33360	0434
4000	0233	34915	623	2790	15277	2592	41931	0426
4500	0228	34912	623	2790	15364	2815	51782	0442

C-REF-NO 002	YR 1966	DEPTH 4995	WAVES 1 2923	AIR T 10.8	VIS 8
CONS. NO 027	MONTH 4	MXSAMPD 48	WAVES 2 2846	WET B 08.2	STN
LAT 40-060N	DAY 29	NC.DPTH 24	WNC-DIR 280	WW-CODE 01	
LON 39-179W	HR 09.3	W-COLOR	WNC-SPD 11	CLD-TPE 8	
MARSC SQ 148	C/I 1810	W-TRNSP	BARO 1016.8	CLD-AMT 5	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	PO4 -P-	NO2	NO3	SIO	PH
093	0000	1520	36336		2697	15097				111	
093	0049	1581	36215	565	2674	15122				023	
093	0098	1574	36204	562	2675	15128				023	
093	0147	1572	36201	557	2675	15135				023	
093	0196	1570	36207	555	2676	15143				021	
093	0244	1549	36158	536	2677	15144				024	
093	0292	1496	36076	525	2683	15134				033	
093	0388	1459	36037	530	2688	15137				033	
093	0482	1352	35824	491	2694	15115				050	
093	0577	1231	35638	465	2704	15088				067	
093	0670	1065	35421	407	2719	15043				106	
093	0762	0841	35155	387	2735	14972				150	
093	0856	0820	35337	431	2753	14982				139	
093	0950	0778	35367	453	2761	14982				133	
093	1146	0667	35313	507	2773	14971				139	
115	1521	0446	35029	593	2778	14941				136	
115	1963	0377	34972	619	2781	14986				139	
115	2410	0344	34958	619	2783	15048				159	
115	2863	0306	34947	609	2786	15110				192	
115	3324	0270	34927	625	2788	15174				230	
115	3793	0238	34909	620	2789	15243				280	
115	4274	0228	34906	622	2790	15323				314	
115	4569	0229	34900	624	2789	15376				300	
115	4768	0230	34900	620	2789	15412				288	

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1520	36336	569 C	2697	15097	0000	00000	1091
0010	1533	36310		2693	15102	0011	00001	1140
0020	1544 B	3629 B		2688	15107	0023	00002	1185
*0030	1554 C	3627 C		2684	15111	0035	00006	1225
0050	1581	36214	565	2674	15122	0061	00016	1328
0075	1581 B	3620 B	563	2673	15126	0094	00038	1345
0100	1574	36204	562	2675	15128	0128	00068	1336
0125	1573	36201	559	2675	15132	0162	00107	1343
0150	1572	36202	557	2675	15136	0196	00155	1349
0175	1572	36207	557	2676	15140	0230	00212	1353
0200	1569	36205	554	2676	15143	0264	00278	1357
0225	1560	36183	544	2676	15144	0298	00352	1361

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
C250	1543	36148	534	2678	15142	0333	00436	1356
0300	1493	3607 B	526	2683	15134	0400	00626	1318
0400	1448	3601 B	526	2689	15135	0532	01100	1296
C500	1331	35789	487	2696	15111	0660	01692	1248
C600	1195	35588	450	2707	15079	0781	02375	1151
0700	C984 E	3531 F	395	2724	15017	0890	03094	0990
0800	C821 E	3521 H	402 B	2743	14972	0981	03792	0813
1000	0751	35364	467	2765	14980	1126	05120	0625
1200	0631 B	3527 C	522	2775	14965	1244	06445	0538
1500	0457	3505 B	589	2778	14942	1400	08608	0490
2000	C374	34970	620	2781	14991	1646	13027	0476
2500	0337	34956	616	2784	15061	1887	18629	0471
3000	C295	34941	613	2786	15129	2123	25325	0453
3500	C256	34919	624	2788	15199	2350	32973	0437
4000	C231	34907	620	2789	15276	2572	41593	0429
4500	C228	34901	624	2789	15364	2798	51564	0450

C-REF-NO 002	YR 1966	DEPTH 4605	WAVES 1 3322	AIR T 11.1	VIS 8
CONS. NO 028	MONTH 4	MXSAMPD 45	WAVES 2 2846	WET B 08.9	STN
LAT 40-115N	DAY 29	NC.DPTH 24	WNC-DIR 330	WW-CODE 03	
LON 35-580W	HR 16.5	W-COLOR	WNC-SPC 14	CLD-TPE 6	
MARSD SQ 148	C/I 1810	W-TRNSP	BARO 1019.0	CLD-AMT 5	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	PO4 -P-	NO2	NO3	SIO	PH
165	0000	1460	36055		2689	15074				030	
165	0050	1457	36042	582	2689	15081				031	
165	0098	1456	36037	576	2689	15089				031	
165	0148	1445	36020	563	2690	15093				031	
165	0197	1400	35907	522	2691	15085				038	
165	0245	1359	35830	499	2693	15079				048	
165	0294	1356	35844	510	2695	15086				046	
165	0391	1250	35640	468	2701	15064				063	
165	0487	1076	35373	385	2713	15016				112	
165	0583	0894	35166	370	2728	14963				148	
165	0679	0724	35093	434	2748	14913				148	
165	0774	0632	35072	479	2759	14892				144	
165	0869	0597	35108	510	2766	14894				136	
165	0965	0535	35054	546	2770	14885				132	
165	1160	0474	35028	582	2775	14892				128	
181	1513	0398	34960	624	2778	14919				126	
181	1972	0359	34937	631	2780	14980				134	
181	2445	0331	34940	621	2783	15049				164	
181	2931	0293	34927	624	2785	15116				201	
181	3428	0253	34911	629	2788	15185				236	
181	3927	0230	34894	624	2788	15263				283	
181	4124	0226	34889	624	2788	15296				292	
181	4319	0225	34895	624	2789	15330				302	
181	4510	0225	34896	627	2789	15364				266	

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1460	36055	567 D	2689	15074	0000	00000	1171
0010	1460	36053		2689	15076	0012	00001	1175
0020	1460	36051		2689	15077	0024	00002	1180
*0030	1460	36049		2689	15079	0036	00005	1184
0050	1457	36042	582	2689	15081	0060	00015	1189
0075	1457	36040	583	2688	15085	0090	00035	1199
0100	1456	36037	576	2689	15089	0120	00062	1206
0125	1453	36035	571	2689	15092	0150	00097	1209
0150	1443	36016	561	2690	15093	0181	00140	1211
0175	1422	3596 B	541	2690	15090	0211	00191	1214
0200	1397	35900	520	2691	15085	0242	00250	1214
0225	1374	35855	506	2692	15081	0272	00317	1207

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0250	1359	35831	500	2693	15080	0303	00391	1201
0300	1352	35837	509	2695	15086	0363	00562	1199
0400	1235	35615	460	2702	15060	0482	00988	1158
0500	1051	35339	379	2715	15009	0593	01500	1044
0600	0861	35146	379	2732	14953	0691	02047	0885
0700	0698	35084	445	2751	14906	0771	02577	0699
0800	0621 B	3508 B	488	2761	14892	0837	03084	0604
1000	0520	35046	555	2771	14884	0951	04130	0520
1200	0463	35020	588	2775	14894	1053	05281	0486
1500	0400	34962	623	2778	14917	1199	07309	0474
2000	0357	34937	630	2780	14984	1440	11672	0477
2500	0327	34939	621	2783	15056	1681	17268	0470
3000	0287	34925	625	2786	15126	1917	23951	0453
3500	0249	34908	628	2788	15196	2143	31552	0432
4000	0228	34891	624	2788	15275	2365	40189	0435
4500	0225	34896	627	2789	15362	2592	50192	0448



C-REF-NO 002	YR 1966	DEPTH 4800	WAVES 1 3423	AIR T 10.4	VIS 8
CONS. NO 029	MONTH 4	MXSAMP 48	WAVES 2 3046	WET B 07.5	STN
LAT 40-119N	DAY 29	NO.DPTH 24	WND-DIR 340	WW-CODE 01	
LON 40-408W	HR 23.1	W-COLOR	WND-SPC 13	CLD-TPE 8	
MARSD SQ 149	C/I 1810	W-TRANSP	BARO 1021.8	CLD-AMT 4	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	PO4 -P-	NO2	NO3	SIO	PH
231	0000	1430	36061		2696	15065				031	
231	0050	1434	36006	582	2691	15073				043	
231	0097	1425	35996	577	2692	15078				037	
231	0145	1410	35979	572	2694	15081				037	
231	0192	1410	35983	569	2694	15089				033	
231	0238	1404	35973	563	2695	15094				036	
231	0284	1390	35936	555	2695	15097				038	
231	0375	1278	35702	485	2700	15072				060	
231	0467	1132	35454	426	2709	15034				092	
231	0562	0988	35285	396	2721	14996				121	
231	0657	0825	35135	396	2736	14949				146	
231	0755	0768	35240	442	2753	14944				136	
231	0855	0630	35137	489	2764	14906				140	
231	0956	0581	35125	521	2770	14903				136	
231	1167	0477	35028	530	2775	14894				127	
*249	1491	0401	34966	617	2778	14916				128	
*249	1971	0362	34948	625	2781	14981				141	
*249	2461	0330	34947	624	2784	15051				164	
*249	2959	0292	34934	620	2786	15120				208	
*249	3466	0256	34915	625	2788	15193				248	
*249	3979	0231	34896	619	2788	15272				318	
*249	4387	0228	34890	624	2788	15343				318	
*249	4590	0229	34889	622	2788	15379				299	
*249	4790	0230	34887	627	2788	15416				296	

#MULTIPLE CAST CONTINUED NEXT DAY

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1430	36061	589 C	2696	15065	0000	00000	1105
0010	1431	36050		2695	15067	0011	00001	1119
0020	1432	36040		2694	15068	0023	00002	1131
*0030	1433	36031		2693	15070	0034	00005	1142
0050	1434	36006	582	2691	15073	0057	00015	1168
0075	1430	35999	579	2691	15076	0087	00034	1174
0100	1424	35995	577	2692	15078	0116	00060	1171
0125	1416	35985	574	2693	15080	0146	00094	1168
0150	1410	35979	572	2694	15082	0175	00136	1168
0175	1410	35981	570	2694	15086	0205	00185	1174
0200	1409	35983	568	2694	15090	0234	00242	1180

DEPTH	T E M P	S A L	OXYGEN	SGMT	SCUND	DELTA-D	POT.EN	SVA
0225	1406	35978	565	2695	15093	0264	00307	1184
0250	1402	35967	562	2695	15095	0294	00381	1191
0300	1376	3590 B	545	2695	15094	0354	00551	1198
0400	1240	35631	467	2702	15062	0473	00977	1154
0500	1083	35389	412	2713	15021	0585	01492	1064
0600	0918 C	3521 C	392	2727	14975	0686	02059	0932
0700	0798 D	3518 F	413	2744	14946	0772	02634	0782
0800	0705 D	3520 D	464	2759	14927	0844	03185	0640
1000	0558	3511 B	525 B	2771	14900	0962	04267	0526
1200	0466	35018	538 B	2775	14895	1065	05430	0491
1500	0400	34965	618	2778	14917	1212	07462	0471
2000	0360	34948	625	2781	14985	1452	11794	0473
2500	0327	34946	624	2784	15057	1690	17336	0465
3000	0289	34933	620	2786	15126	1924	23964	0450
3500	0254	34914	625	2788	15198	2151	31587	0437
4000	0231	34896	619	2788	15276	2374	40280	0436
4500	0228	34889	623	2788	15364	2604	50422	0458

C-REF-NO 002	YR 1966	DEPTH 4790	WAVES 1 3334	AIR T 08.7	VIS 8
CONS. NO 030	MONTH 4	MXSAMPD 48	WAVES 2 3046	WET B 06.7	STN
LAT 40-160N	DAY 30	NO.DPTH 24	WND-DIR 330	WW-CODE 03	
LON 41-173W	HR 05.7	W-COLOR	WND-SPD 14	CLD-TPE 8	
MARSD SQ 149	C/I 1810	W-TRNSP	BARO 1025.2	CLD-AMT 4	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	PO4 -P-	NO2	NO3	SIO	PH
056	0000	1410	36019		2697	15058				032	
056	0050	1419	35997	577	2693	15069				031	
056	0098	1420	35999	577	2693	15077				034	
056	0148	1420	36000	577	2693	15085				034	
056	0197	1407	35972	561	2694	15088				034	
056	0246	1402	35965	561	2695	15095				034	
056	0295	1398	35955	561	2695	15101				033	
056	0394	1395	35949	557	2695	15117				028	
056	0493	1287	35706	548	2698	15094				054	
056	0592	1084	35390	408	2713	15036				104	
056	0691	0881	35177	387	2731	14976				141	
056	0791	0818	35303	432	2750	14970				114	
056	0891	0629	35109	490	2762	14911				129	
056	0991	0558	35077	530	2769	14899				132	
056	1190	0488	35055	575	2775	14903				113	
070	1488	0418	34995	607	2778	14923				117	
070	1987	0363	34955	630	2781	14984				136	
070	2487	0337	34959	622	2784	15059				164	
070	2988	0295	34949	619	2787	15127				202	
070	3488	0259	34921	625	2788	15198				242	
070	3988	0235	34905	620	2789	15276				292	
070	4385	0229	34900	622	2789	15343				305	
070	4584	0229	34896	622	2789	15378				258	
070	4781	0230	34901	629	2789	15414				196	

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1410	36019	566 C	2697	15058	0000	00000	1095
0010	1412	36014		2696	15060	0011	00001	1105
0020	1414	36010		2696	15062	0022	00002	1115
*0030	1415	36007		2695	15064	0034	00005	1123
0050	1419	35997	577	2693	15069	0056	00015	1144
0075	1420	35997	579	2693	15073	0085	00033	1154
0100	1420	35999	577	2693	15077	0114	00059	1160
0125	1421	36001	578	2693	15081	0144	00093	1167
0150	1420	35999	576	2693	15085	0173	00135	1174
0175	1413	35985	568	2694	15087	0203	00184	1178
0200	1407	35971	561	2694	15089	0233	00242	1182
0225	1404	35967	560	2694	15092	0263	00307	1187

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT. EN	SVA
0250	1402	35964	561	2695	15095	0293	00380	1192
0300	1399	35957	561	2695	15103	0353	00551	1206
0400	1391	35939	558	2695	15116	0476	00994	1233
0500	1274	35683	538 B	2699	15091	0599	01564	1210
0600	1065	35365	403	2714	15031	0715	02213	1073
0700	0875 B	3519 C	389	2732	14975	0814	02874	0897
0800	0801 B	3529 B	437	2752	14965	0896	03502	0723
1000	0554	35076	533	2769	14898	1024	04671	0544
1200	0485	35053	577	2776	14904	1129	05852	0491
1500	0416	34993	608	2779	14925	1276	07887	0473
2000	0362	34955	630	2781	14986	1515	12212	0471
2500	0336	34959	622	2784	15060	1755	17768	0469
3000	0294	34948	619	2787	15129	1988	24395	0447
3500	0258	34920	625	2788	15200	2215	32012	0439
4000	0235	34905	620	2789	15278	2439	40728	0436
4500	0229	34897	622	2789	15364	2668	50817	0454

C-REF-NO 002 YR 1966 DEPTH 4960 WAVES 1 3335 AIR T 08.1 VIS 8  
 CONS. NO 031 MONTH 4 MXSAMPD 49 WAVES 2 8050 WET B 05.2 STN  
 LAT 40-185N DAY 30 NC.DPTH 25 WND-DIR 300 WW-CODE 02  
 LON 41-580W PR 11.9 W-COLOR WND-SPC 13 CLD-TPE 8  
 MARSC SQ 149 C/I 1810 W-TRANSP BARO 1027.2 CLD-AMT 8 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	PO4	-P-	NO2	NO3	SIO	PH
119	0000	1460	36103		2693	15075					031	
119	0050	1457	36080	578	2692	15082					031	
119	0099	1455	36082	572	2692	15089					031	
119	0150	1451	36066	576	2692	15096					031	
119	0200	1411	35971	546	2693	15090					035	
119	0249	1402	35968	556	2695	15095					035	
119	0299	1395	35956	547	2695	15101					036	
119	0398	1376	35930	556	2697	15111					037	
119	0496	1281	35738	527	2702	15093					050	
119	0593	1067	35364	396	2714	15030					111	
119	0691	0890	35217	391	2732	14980					139	
119	0788	0711	35062	432	2747	14926					148	
119	0887	0622	35070	489	2760	14907					143	
119	0986	0567	35083	526	2768	14902					137	
119	1194	0491	35047	572	2774	14905					131	
136	1443	0440	35022	598	2778	14925					131	
136	1936	0376	34968	624	2781	14981					139	
136	2434	0343	34962	624	2784	15052					167	
136	2934	0304	34945	624	2786	15121					189	
136	3437	0269	34931	630	2788	15194					219	
136	3940	0239	34907	624	2789	15269					279	
136	4241	0231	34905	619	2789	15319					320	
136	4543	0229	34899	621	2789	15371					330	
136	4742	0228	34882	624	2788	15406					330	
136	4942	0229	34897	629	2789	15442					304	

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1460	36103	565 F	2693	15075	0000	00000	1136
0010	1460	36100		2693	15076	0011	00001	1140
0020	1459	36096		2692	15078	0023	00002	1145
*0030	1459	36093		2692	15079	0035	00005	1149
0050	1457	36080	578	2692	15082	0058	00015	1162
0075	1456	36081	580 B	2692	15086	0087	00034	1167
0100	1455	36082	572	2692	15089	0117	00060	1171
0125	1455	36080	576	2692	15094	0146	00094	1181
0150	1451	36066	576	2692	15096	0176	00137	1190
0175	1431 B	3602 C	561 B	2692	15093	0206	00187	1192
0200	1411	35971	546	2693	15090	0236	00245	1191



DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0225	1404	3596 B	550	2694	15092	0266	00310	1190
0250	1402	35968	556	2695	15095	0296	00383	1190
0300	1395	35956	547	2695	15101	0356	00554	1199
0400	1375	35928	556	2697	15111	0478	00991	1207
0500	1273	35722	521	2702	15091	0598	01547	1179
0600	1054	35350	393	2715	15026	0712	02185	1064
0700	0872	35199	394	2734	14974	0810	02838	0883
0800	0697	35058	439	2749	14922	0892	03464	0732
1000	0561	35082	530	2769	14901	1021	04646	0549
1200	0489	35046	573	2775	14905	1128	05846	0501
1500	0431	35015	603	2779	14931	1277	07910	0476
2000	0371	34966	625	2781	14990	1518	12273	0475
2500	0338	34960	624	2784	15061	1759	17865	0471
3000	0299	34943	625	2786	15131	1996	24596	0458
3500	0265	34928	630	2788	15203	2227	32350	0444
4000	0237	34906	623	2789	15279	2453	41140	0439
4500	0229	34901	620	2789	15364	2682	51232	0452

C-REF-NO 002	YR 1966	DEPTH 4850	WAVES 1 3323	AIR T 10.5	VIS 8
CONS. NO 032	MONTH 4	MXSAMPC 49	WAVES 2 3056	WET B 08.2	STN
LAT 40-230N	DAY 30	NO.DPTH 24	WND-DIR 330	WW-CODE 01	
LON 42-385W	HR 17.5	W-COLOR	WND-SPC 11	CLD-TPE 8	
MARSD SQ 149	C/I 1810	W-TRNSP	BARO 1030.0	CLD-AMT 3	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	PO4	-P-	NO2	NO3	SIO	PH
174	0000	1460	36091		2692	15075					032	
174	0050	1459	36078	571	2691	15082					032	
174	0098	1458	36076	567	2691	15090					032	
174	0148	1458	36076	567	2691	15098					032	
174	0197	1437	36045	564	2693	15099					032	
174	0246	1407	35980	546	2695	15097					037	
174	0296	1405	35975	547	2695	15104					038	
174	0395	1390	35945	553	2696	15115					038	
174	0495	1248	35650	480	2702	15081					065	
174	0595	1006	35313	389	2720	15008					123	
174	0696	0832	35172	400	2738	14958					145	
174	0798	0694	35107	448	2753	14921					146	
174	0899	0577	35077	513	2766	14891					139	
174	1001	0529	35073	549	2772	14889					134	
174	1202	0441	35023	598	2778	14885					126	
187	1461	0380	34939	639	2778	14902					119	
187	1962	0342	34945	638	2782	14971					134	
187	2462	0314	34943	639	2785	15044					138	
187	2962	0300	34944	644	2786	15124					138	
187	3462	0287	34941	642	2787	15206					150	
187	3961	0242	34914	626	2789	15274					265	
187	4461	0228	34900	625	2789	15356					312	
187	4662	0228	34902	631	2789	15392					283	
187	4863	0227	34908	640	2790	15428					229	

\*DEPTH OF BOTTOM OBSERVATION GREATER THAN SOUNDING

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1460	36091	574 C	2692	15075	0000	00000	1145
0010	1460	36088		2692	15076	0012	00001	1149
0020	1459	36086		2691	15078	0023	00002	1154
*0030	1459	36083		2691	15079	0035	00005	1158
0050	1459	36078	571	2691	15082	0058	00015	1167
0075	1458	36076	569	2691	15086	0088	00034	1175
0100	1458	36076	567	2691	15090	0117	00061	1182
0125	1459	36078	567	2691	15095	0147	00095	1191
0150	1457	36075	567	2691	15098	0177	00138	1196
0175	1448	36063	566	2692	15099	0208	00188	1194
0200	1435	36041	563	2693	15099	0238	00246	1190

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0225	1419	3601 B	553	2694	15097	0268	00311	1189
0250	1406	35979	546	2695	15097	0298	00385	1191
0300	1406	35977	548	2695	15105	0358	00555	1206
0400	1386	35934	551	2696	15114	0481	00997	1224
0500	1236	35631	474	2703	15077	0602	01556	1174
0600	0996	35303	388	2721	15005	0711	02171	0997
0700	0826	35168	401	2739	14957	0804	02785	0833
0800	0691	35106	449	2753	14920	0881	03375	0689
1000	0529	35073	549	2772	14888	1002	04483	0512
1200	0442	35024	598	2778	14885	1100	05586	0455
1500	0375	34936	641	2778	14907	1240	07525	0460
2000	0339	34945	638	2783	14976	1470	11676	0447
2500	0313	34943	639	2785	15050	1697	16957	0446
3000	0300	34944	644	2786	15131	1928	23526	0458
3500	0284	34939	641	2787	15211	2165	31489	0467
4000	0240	34912	625	2789	15280	2397	40500	0440
4500	0228	34900	626	2789	15364	2625	50586	0450

C-REF-NO 002 YR 1966 DEPTH 4780 WAVES 1 3521 AIR T 10.2 VIS 8  
 CONS. NO 033 MCNTH 4 MXSAMPD 48 WAVES 2 3055 WET B 07.7 STN  
 LAT 40-267N DAY 30 NC.DPTH 24 WND-DIR 350 WW-CODE 01  
 LON 43-161W HR 23.3 W-COLOR WND-SPC 07 CLD-TPE 8  
 MARSD SQ 149 C/I 1810 W-TRNSP BARO 1032.6 CLC-AMT 5 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	PO4	-P-	NO2	NO3	SIO	PH
232	0000	1490	36136		2689	15085					C29	
232	0050	1486	36138	562	2690	15092					C28	
232	0100	1478	36118	562	2690	15097					C28	
232	0151	1475	36112	564	2690	15104					C28	
232	0201	1470	36097	566	2690	15111					030	
232	0251	1417	36000	561	2694	15101					032	
232	0302	1406	35984	562	2695	15105					035	
232	0402	1377	35919	548	2696	15112					041	
232	0502	1246	35656	479	2703	15081					064	
232	0601	1014	35339	383	2721	15012					122	
232	0701	0850	35147	387	2733	14966					145	
232	0800	0724	35133	437	2751	14934					145	
232	0899	0642	35156	484	2764	14918					140	
232	0998	0577	35135	524	2771	14908					134	
232	1200	0463	35037	591	2777	14894					126	
*251	1512	0415	34994	614	2779	14926					126	
*251	2011	0371	34980	614	2782	14992					146	
*251	2509	0327	34956	619	2785	15058					177	
*251	3006	0289	34943	621	2787	15127					214	
*251	3499	0252	34921	622	2789	15197					260	
*251	3993	0230	34906	620	2789	15274					301	
*251	4387	0226	34904	614	2790	15342					142	
*251	4584	0227	34907	622	2790	15378					315	
*251	4781	0227	34909		2790	15413					268	

\*DEPTH OF BOTTOM OBSERVATION GREATER THAN SOUNDING

\*MULTIPLE CAST CONTINUED NEXT DAY

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1490	36136	563 C	2689	15085	0000	00000	1174
0010	1489	36136		2689	15086	0012	00001	1175
0020	1488	36135		2689	15087	0024	00002	1176
*0030	1487	36134		2689	15089	0036	00005	1178
0050	1486	36138	562	2690	15092	0059	00015	1180
0075	1482	36129	562	2690	15094	0089	00034	1186
0100	1478	36118	562	2690	15097	0119	00061	1193
0125	1476	36115	563	2690	15101	0149	00096	1200
0150	1475	36112	564	2690	15104	0180	00139	1207
0175	1476	36110	565	2690	15109	0210	00190	1217

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0200	1470	36098	566	2690	15111	0241	00249	1222
0225	1445 B	3605 B	564	2692	15106	0271	00316	1211
0250	1418	36002	561	2694	15101	0302	00390	1198
0300	1406	35984	562	2695	15105	0362	00561	1201
0400	1378	35921	549	2696	15112	0484	01001	1218
0500	1250	35663	481	2702	15082	0605	01559	1177
0600	1016	35342	384	2721	15013	0715	02177	1003
0700	0851	35148	387	2733	14966	0811	02813	0888
0800	0724	35133	437	2751	14934	0892	03435	0718
1000	0576	35134	525	2771	14908	1019	04587	0531
1200	0463	35037	591	2777	14894	1120	05734	0473
1500	0415	34994	614	2779	14924	1264	07731	0471
2000	0372	34980	614	2782	14990	1502	12024	0466
2500	0328	34956	619	2785	15057	1737	17487	0458
3000	0289	34943	621	2787	15127	1968	24021	0443
3500	0252	34921	622	2789	15198	2191	31516	0429
4000	0230	34906	620	2789	15276	2410	40041	0427
4500	0227	34906	620	2790	15363	2634	49917	0444



C-REF-NO 002 YR 1966 DEPTH 4760 WAVES 1 4920 AIR T 09.5 VIS 8  
 CONS. NO 034 MONTH 5 MXSAMPD 48 WAVES 2 4954 WET B 06.3 STN  
 LAT 40-396N DAY 01 NO.DPTH 24 WND-DIR 270 WW-CODE 03  
 LON 43-580W HR 05.4 W-COLOR WND-SPD 04 CLD-TPE 6  
 MARSC SQ 149 C/I 1810 W-TRNSP BARO 1032.5 CLD-AMT 3 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	PO4	-P-	NO2	NO3	SIO	PH
053	0000	1470	36106		2691	15078					C28	
053	0050	1469	36098	565	2690	15086					C28	
053	0100	1470	36097	563	2690	15094					C21	
053	0150	1470	36097	564	2690	15103					C25	
053	0201	1465	36088	564	2690	15109					C23	
053	0250	1430	36004	542	2692	15105					C29	
053	0301	1410	35976	536	2694	15107					C36	
053	0401	1396	35951	544	2695	15118					C31	
053	0500	1378	35932	560	2697	15128					C36	
053	0600	1181	35533	431	2706	15073					C84	
053	0699	1003	35300	380	2720	15024					C25	
053	0799	0834	35158	388	2737	14976					C48	
053	0898	0732	35193	440	2755	14954					C43	
053	0997	0644	35164	561	2765	14935					C36	
053	1196	0504	35047	491	2773	14911					C31	
065	1489	0422	34990	609	2778	14925					C23	
065	1988	0378	34968	624	2781	14991					C41	
065	2488	0344	34966	619	2784	15062					C65	
065	2988	0304	34949	625	2786	15131					C81	
065	3487	0262	34927	627	2788	15199					C01	
065	3987	0233	34911	627	2789	15275					C47	
065	4387	0227	34903	631	2789	15343					C38	
065	4589	0226	34905	636	2790	15378					C04	
065	4790	0226	34909	640	2790	15414					C00	

\*DEPTH OF BOTTOM OBSERVATION GREATER THAN SOUNDING

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1470	36106	567 C	2691	15078	0000	00000	1154
0010	1470	36104		2691	15080	0012	00001	1158
0020	1470	36103		2691	15081	0023	00002	1162
*0030	1470	36101		2690	15083	0035	00005	1166
0050	1469	36098	565	2690	15086	0059	00015	1173
0075	1469	36097	564	2690	15090	0088	00034	1183
0100	1470	36097	563	2690	15094	0118	00061	1192
0125	1470	36097	563	2690	15099	0148	00096	1200
0150	1470	36097	564	2690	15103	0179	00139	1207
0175	1470	36098	566	2690	15107	0209	00190	1213
0200	1465	36089	564	2690	15109	0240	00249	1218

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
C225	1449	3605 B	554	2691	15107	0271	00316	1221
C250	1430	36004	542	2692	15105	0301	00391	1221
C300	1410	35976	536	2694	15106	0363	00565	1216
0400	1396	35951	544	2695	15118	0486	01009	1234
C500	1378	35932	560	2697	15128	0611	01587	1239
C600	1181	35533	431	2706	15073	0733	02271	1165
0700	1001	35298	380	2720	15023	0843	03009	1031
0800	0833	35158	388	2737	14976	0940	03746	0870
1000	0641	35162	561	2765	14935	1089	05101	0605
1200	0502	35046	492	2773	14910	1203	06382	0519
1500	0420	34989	611	2778	14926	1355	08492	0481
2000	0377	34968	624	2781	14993	1600	12912	0482
2500	0343	34966	619	2784	15064	1843	18565	0474
3000	0303	34948	625	2786	15133	2082	25336	0460
3500	C261	34927	627	2788	15201	2312	33062	0439
4000	C233	34911	627	2789	15277	2534	41700	0429
4500	C226	34904	634	2789	15363	2759	51601	0445

C-REF-NO 002 YR 1966 DEPTH 4690 WAVES 1 2322 AIR T 11.2 VIS 8  
 CONS. NO 035 MONTH 5 MXSAMPD 47 WAVES 2 2723 WET B 08.3 STN  
 LAT 40-092N DAY 01 NC.DPTH 24 WND-DIR 190 WW-CODE 02  
 LON 44-089W HR 10.7 W-COLOR WND-SPC 06 CLD-TPE 8  
 MARSC SQ 149 C/I 1810 W-TRANSP BARO 1032.1 CLD-AMT 5 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	PO4	-P-	NO2	NO3	SIO	PH
107	0000	1425	36237		2711	15065					C58	
107	0050	1464	36108	563	2692	15084					031	
107	0100	1461	36090	569	2691	15091					031	
107	0150	1460	36089	567	2692	15099					031	
107	0201	1435	36022	551	2692	15099					032	
107	0250	1421	35998	547	2693	15102					036	
107	0301	1389	35929	530	2695	15099					043	
107	0401	1353	35880	546	2698	15103					043	
107	0502	1186	35543	437	2706	15059					082	
107	0602	0975	35268	374	2722	14997					134	
107	0702	0796	35103	395	2738	14945					153	
107	0803	0664	35056	458	2753	14909					147	
107	0903	0588	35054	504	2763	14896					142	
107	1004	0551	35076	540	2770	14898					136	
107	1204	0460	34999	593	2774	14893					126	
119	1507	0403	34973	622	2778	14920					122	
119	2006	0375	34972	624	2781	14993					142	
119	2505	0335	34953	629	2784	15061					155	
119	3003	0300	34943	629	2786	15132					189	
119	3503	0261	34929	635	2789	15202					214	
119	4004	0234	34915	634	2790	15278					252	
119	4306	0226	34905	633	2790	15328					296	
119	4506	0225	34909	642	2790	15363					243	
119	4708	0224	34916	652	2791	15399					194	

\*DEPTH OF BOTTOM OBSERVATION GREATER THAN SOUNDING

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1425	36237	545 C	2711	15065	0000	00000	0966
0010	1433	36209		2707	15069	0010	00001	1005
0020	1440	3618 B		2703	15073	0020	00002	1042
*0030	1446 B	3616 C		2700	15076	0031	00005	1074
0050	1464	36108	563	2692	15084	0053	00014	1156
0075	1465	3609 B	568	2691	15089	0083	00033	1178
0100	1461	36090	569	2691	15091	0112	00060	1178
0125	1462	36092	569	2692	15096	0142	00094	1186
0150	1460	36089	567	2692	15099	0172	00137	1192
0175	1449	3606 B	559	2692	15099	0202	00187	1198
0200	1436	36023	551	2692	15099	0233	00245	1204

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0225	1429	36010	549	2692	15100	0263	00311	1206
0250	1421	35998	547	2693	15102	0293	00386	1207
0300	1390	35930	530	2695	15099	0354	00558	1207
0400	1354	35881	546	2698	15103	0476	00994	1198
0500	1190	35551	440	2705	15060	0594	01539	1144
0600	0979	35273	375	2722	14998	0702	02145	0990
0700	0799	35105	394	2738	14946	0794	02758	0837
0800	0667	35056	456	2753	14910	0871	03350	0690
1000	0552	35075	539	2769	14898	0996	04490	0542
1200	0462	35001	592	2774	14893	1101	05678	0498
1500	0404	34973	622	2778	14919	1248	07721	0471
2000	0375	34972	624	2781	14992	1489	12070	0476
2500	0335	34953	629	2784	15060	1731	17678	0472
3000	0300	34943	629	2786	15131	1968	24432	0460
3500	0261	34929	635	2789	15202	2198	32142	0438
4000	0234	34915	634	2790	15278	2420	40759	0428
4500	0225	34909	642	2790	15362	2643	50585	0439

C-REF-NO 002	YR 1966	DEPTH 4535	WAVES 1 2423	AIR T 16.7	VIS 8
CONS. NO 036	MONTH 5	MXSAMPC 45	WAVES 2 2744	WET B 13.3	STN
LAT 40-007N	DAY C1	NC.DPTH 24	WNC-DIR 240	WW-CODE 01	
LON 44-581W	HR 16.5	W-COLOR	WNC-SPC 12	CLD-TPE 8	
MARSD SQ 149	C/I 1810	W-TRNSP	BARO 1031.0	CLD-AMT 6	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	PO4 -P-	NO2	NO3	SIO	PH
165	0000	1670	36369		2665	15143				023	
165	0050	1676	36361	550	2663	15153				023	
165	0099	1677	36365	525	2663	15161				021	
165	0149	1676	36361	525	2663	15169				021	
165	0200	1582	36169	520	2670	15147				026	
165	0249	1566	36162	530	2674	15150				026	
165	0298	1522	36072	520	2677	15143				030	
165	0397	1369	35766	520	2686	15106				044	
165	0495	1238	35537	516	2695	15076				047	
165	0593	1097	35366	359	2708	15041				098	
165	0690	0888	35167	364	2729	14978				126	
165	0788	0721	35077	427	2747	14930				126	
165	0885	0611	35045	485	2759	14902				120	
165	0983	0572	35083	517	2767	14903				116	
165	1182	0487	35049	573	2775	14901				116	
177	1384	0424	34983	609	2777	14908				101	
177	1859	0373	34945	633	2779	14966				102	
177	2341	0349	34959	633	2783	15039				105	
177	2832	0311	34949	633	2786	15107				136	
177	3328	0266	34925	629	2788	15173				187	
177	3827	0230	34910	629	2790	15245				274	
177	4126	0223	34896	627	2789	15295				310	
177	4322	0227	34908	641	2790	15331				233	
177	4517	0227	34906	640	2790	15366				218	

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1670	36369	581 D	2665	15143	0000	00000	1396
0010	1671	36368		2665	15145	0014	00001	1403
0020	1673	36367		2665	15147	0028	00003	1410
*0030	1674	36366		2664	15149	0042	00007	1416
0050	1676	36361	550	2663	15153	0071	00018	1432
0075	1677	36363	539	2663	15157	0107	00042	1441
0100	1677	36366	525	2663	15162	0144	00074	1448
0125	1682 B	3638 C	524	2663	15167	0180	00117	1461
0150	1674	36357	525	2663	15169	0217	00169	1464
0175	1629 D	3626 E	522	2667	15158	0254	00230	1439
0200	1582	36169	520	2670	15147	0290	00299	1411
0225	1571 B	3616 C	525	2672	15147	0325	00376	1401



DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0250	1565	36161	530	2674	15150	0360	00462	1396
0300	1519	36066	520	2677	15142	0430	00660	1380
0400	1365	35758	521	2686	15105	0566	01146	1310
0500	1232	35528	508 B	2696	15074	0695	01740	1240
0600	1082	35350	356	2710	15037	0814	02409	1115
0700	0869	35154	369	2731	14972	0916	03088	0912
0800	0704	35070	435	2749	14925	0999	03726	0735
1000	0564	35084	522	2768	14903	1130	04913	0553
1200	0480	35043	577	2775	14901	1236	06105	0492
1500	0404 B	3496 B	620	2777	14919	1383	08154	0478
2000	0365	34948	634	2780	14987	1627	12551	0480
2500	0338	34958	633	2784	15061	1869	18179	0472
3000	0296	34941	632	2786	15129	2105	24889	0454
3500	0251	34920	629	2789	15197	2331	32467	0428
4000	0224	34900	626	2789	15273	2549	40939	0422
4500	0227	34906	640	2790	15363	2772	50767	0444

C-REF-NO 002 YR 1966 DEPTH 4800 WAVES 1 2223 AIR T 15.0 VIS 8  
 CONS. NO 037 MONTH 5 MXSAMPD 46 WAVES 2 2744 WET B 11.9 STN  
 LAT 40-523N DAY 01 NC.DPTH 24 WND-DIR 220 WW-CODE 03  
 LON 44-272W HR 23.4 W-COLOR WNC-SPD 15 CLD-TPE 8  
 MARSD SQ 149 C/I 1810 W-TRNSP BARO 1028.6 CLD-AMT 7 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	PO4	-P-	NO2	NO3	SIO	PH
234	0000	1490	36130		2688	15085					026	
234	0050	1478	36108	562	2689	15089					030	
234	0098	1469	36087	564	2690	15094					030	
234	0147	1464	36076	562	2690	15100					030	
234	0196	1464	36112	566	2693	15108					030	
234	0243	1434	36010	547	2691	15105					034	
234	0291	1404	35946	530	2693	15103					038	
234	0385	1383	35920	532	2695	15111					038	
234	0479	1351	35850	535	2696	15115					042	
234	0572	1270	35706	505	2702	15101					057	
234	0666	1091	35395	406	2712	15051					101	
234	0762	0945	35243	374	2725	15012					133	
234	0857	0793	35116	406	2740	14969					146	
234	0954	0643	35039	470	2755	14926					141	
234	1156	0544	35072	536	2770	14920					133	
*250	1474	0427	34972	605	2776	14924					120	
*250	1924	0378	34949	631	2779	14980					125	
*250	2381	0354	34959	625	2782	15048					150	
*250	2846	0318	34943	624	2784	15112					174	
*250	3316	0281	34934	625	2787	15178					200	
*250	3791	0249	34919	633	2789	15247					226	
*250	4173	0232	34903	624	2789	15307					278	
*250	4365	0228	34903	625	2789	15339					285	
*250	4557	0227										

\*MULTIPLE CAST CONTINUED NEXT DAY

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1490	36130	563 C	2688	15085	0000	00000	1179
0010	1487	36125		2688	15085	0012	00001	1180
0020	1485	36120		2689	15086	0024	00002	1181
*0030	1482	36115		2689	15087	0036	00005	1182
0050	1478	36108	562	2689	15089	0060	00015	1185
0075	1473	36096	562	2689	15091	0089	00035	1190
0100	1469	36086	564	2690	15094	0120	00062	1197
0125	1466	36077	563	2690	15097	0150	00097	1205
0150	1464	36080	563	2690	15100	0180	00139	1208
0175	1466	36100	565	2691	15105	0211	00190	1201
0200	1462	36105	565	2692	15108	0241	00248	1199

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0225	1447	3606 B	555	2692	15107	0271	00315	1213
0250	1429	35998	544	2691	15105	0302	00390	1224
0300	1401	35942	529	2693	15103	0364	00564	1222
0400	1380	35913	534	2695	15112	0487	01009	1228
0500	1339	35828	533	2697	15114	0612	01584	1235
0600	1220 B	3561 C	476 C	2704	15088	0733	02272	1181
0700	1038	3533 B	387	2716	15037	0847	03030	1072
0800	0884	35188	381	2731	14995	0949	03808	0932
1000	0607 D	3504 C	490	2759	14919	1108	05258	0646
1200	0524	3506 B	548	2772	14920	1228	06605	0538
1500	0422	34968	608	2776	14927	1386	08790	0499
2000	0373	34950	631	2780	14991	1637	13318	0490
2500	0345	34956	624	2783	15064	1885	19079	0485
3000	0306	34940	624	2785	15134	2129	26000	0470
3500	0268	34929	629	2788	15204	2364	33889	0448
4000	0238	34909	628	2789	15279	2591	42723	0439
4500	0227							

C-REF-NO 002	YR 1966	DEPTH 4825	WAVES 1 2425	AIR T 14.0	VIS 6
CONS. NO 038	MONTH 5	MXSAMPD 39	WAVES 2 2948	WET B 14.0	STN
LAT 41-072N	DAY 02	NC.DPTH 24	WNC-DIR 250	WW-CODE 62	
LON 45-014W	HR 12.9	W-COLOR	WNC-SPC 20	CLD-TPE 7	
MARSC SQ 149	C/I 1810	W-TRNSP	BARO 1021.9	CLD-AMT 8	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	PO4 -P-	NO2	NO3	SIO	PH
129	0000	1510	36086		2680	15090				031	
129	0049	1482	36075	543	2686	15089				031	
129	0096	1470	36063	541	2687	15093				031	
129	0142	1435	36018	546	2692	15089				031	
129	0187	1421	35992	543	2693	15092				033	
129	0228	1409	35951	541	2692	15094				033	
129	0270	1408	35983	537	2695	15101				035	
129	0345	1350	35869	531	2698	15093				041	
129	0417	1151	35456	390	2705	15032				099	
129	0481	1037	35352	381	2718	15001				117	
129	0546	0879	35174	369	2731	14951				145	
129	0609	0772	35091	400	2741	14920				148	
129	0675	0677	35048	447	2751	14893				148	
129	0749	0552	34923	506	2757	14854				142	
129	0934	0468	34961	586	2770	14851				123	
145	1161	0428	34965	609	2775	14872				123	
145	1501	0381	34939	632	2778	14909				126	
145	1859	0366	34934	635	2779	14963				133	
145	2241	0354	34952	628	2782	15024				144	
145	2654	0324	34951	627	2784	15082				173	
145	3094	0295	34938	625	2786	15145				182	
145	3555	0261	34935	630	2789	15211				219	
145	3744	0248	34915	629	2789	15238				237	
145	3934	0236	34907	628	2789	15267				262	

## I N T E R P C L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1510	36086	542 C	2680	15090	0000	00000	1253
0010	1506	36086		2681	15091	0013	00001	1247
0020	1502	36086		2682	15091	0025	00003	1242
*0030	1497 B	36085		2683	15091	0038	00006	1236
0050	1482	36075	543	2686	15090	0062	00016	1217
0075	1476	36071	543	2687	15092	0093	00036	1216
0100	1467	36059	541	2688	15093	0124	00063	1213
0125	1448	36035	544	2690	15091	0154	00098	1198
0150	1432	36013	546	2692	15089	0184	00141	1188
0175	1424	35999	544	2693	15091	0214	00191	1190
0200	1417	35976	542	2692	15092	0244	00249	1199
0225	1410	35953	541	2692	15094	0274	00315	1209

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
C250	1409	3597 B	539	2693	15098	0305	00389	1205
0300	1398 B	3597 B	543 C	2696	15102	0365	00560	1195
0400	1201 C	3555 F	423 D	2703	15048	0483	00982	1138
C500	0991 B	3530 B	375	2722	14986	0589	01469	0968
0600	0785	35099	394	2739	14924	0679	01971	0802
0700	0633 B	3501 B	467	2754	14879	0753	02463	0664
0800	0510 E	3491 F	536	2761	14845	0816	02947	0583
1000	0452	34965	597 B	2772	14855	0925	03944	0490
1200	0421	34962	612	2776	14876	1022	05049	0473
1500	0381	34939	632	2778	14909	1165	07035	0466
2000	0362	34940	633	2780	14986	1406	11390	0481
2500	0336	34953	627	2784	15060	1649	17030	0473
3000	0301	34941	625	2786	15132	1888	23815	0463
3500	0265	34937	629	2789	15203	2118	31556	0438



C-REF-NO 002	YR 1966	DEPTH 4720	WAVES 1 2524	AIR T 14.1	VIS 6
CONS. NO 039	MONTH 5	MXSAMPC 47	WAVES 2 4946	WET B 13.8	STN
LAT 41-278N	DAY C2	NC.DPTH 24	WNC-DIR 250	WW-CODE 4C	
LON 45-31CW	HR 19.0	W-COLOR	WNC-SPC 16	CLD-TPE 7	
MARSC SQ 149	C/I 1810	W-TRANSP	BARO 1020.1	CLD-AMT 8	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	PO4	-P-	NO2	NO3	SIO	PH
19C	CC00	1050	34942		2684	14921					038	
19C	C050	1158	35235	603	2687	14971					040	
19C	0100	1285	35627	572	2693	15028					041	
19C	C150	1385	35924	563	2695	15073					035	
19C	C200	1195	35491	504	2700	15012					060	
19C	C250	0993	35129	458	2708	14944					095	
19C	C300	1029	35328	383	2718	14968					117	
19C	0400	0825	35118	380	2735	14906					148	
19C	C499	0574	34855	494	2749	14821						
19C	0599	0571	35017	508	2762	14838					139	
19C	C698	0517	35006	574	2768	14832					130	
19C	C798	0503	35037	557	2772	14844					127	
19C	C897	0462	34997	584	2774	14843					124	
19C	C997	0442	34990	600	2775	14851					121	
19C	1198	0409	34971	621	2778	14871					121	
20C	1519	0377	34948	633	2779	14911					121	
20C	1998	0357	34947	630	2781	14983					136	
20C	2487	0327	34944	630	2784	15054					160	
20C	2985	0293	34932	630	2786	15125					181	
20C	3488	0257	34921	630	2788	15197					221	
20C	3993	0233	34903	630	2789	15276					267	
20C	4294	0228	34900	628	2789	15327					278	
20C	4493	0228	34907	645	2790	15362					224	
20C	4688	0225	34906	646	2790	15395					192	

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
CC00	1050	34942	608 H	2684	14921	0000	00000	1220
CC10	1073	3501 B		2685	14932	0012	00001	1214
CC20	1097 B	3507 C		2686	14943	0024	00003	1208
*CC30	1120 B	3514 E		2686	14953	0037	00006	1203
CC50	1158	35235	603	2687	14971	0061	00016	1203
CC75	1222	3543 C	595 C	2690	15000	0091	00035	1182
C100	1285	35627	572	2693	15028	0120	00061	1164
C125	1355 F	3583 I	569 B	2694	15058	0150	00095	1161
C150	1385	35924	563	2695	15073	0179	00136	1158
C175	1309 F	3575 I	536 B	2697	15050	0208	00185	1142
C200	1195	35491	504	2700	15012	0236	00240	1120
C225	1080 E	3527 G	482	2704	14973	0264	00300	1081

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0250	0993	35129	458	2708	14944	0291	00366	1043
0300	1029	35328	383	2718	14968	0342	00508	0968
0400	0825	35118	380	2735	14906	0432	00828	0812
0500	0573	34856	494	2749	14821	0506	01169	0667
0600	0570	35017	509	2762	14838	0568	01516	0557
0700	0517	35007	574	2768	14833	0622	01875	0508
0800	0502	35036	557	2772	14844	0672	02260	0479
1000	0441	34990	600	2775	14851	0767	03137	0459
1200	0409	34971	621	2778	14871	0859	04181	0451
1500	0378	34949	633	2779	14908	0997	06100	0455
2000	0357	34947	630	2781	14984	1232	10349	0469
2500	0326	34944	630	2784	15056	1470	15875	0465
3000	0292	34932	630	2786	15128	1704	22548	0455
3500	0256	34921	630	2788	15199	1932	30203	0436
4000	0233	34903	630	2789	15277	2155	38872	0434
4500	0227	34904	640 B	2789	15363	2381	48844	0445

C-REF-NO 002 YR 1966 DEPTH 4440 WAVES 1 2524 AIR T 15.5 VIS 7  
 CONS. NO 040 MONTH 5 MXSAMPC 44 WAVES 2 49XX WET B 15.1 STN  
 LAT 41-322N DAY 03 NC.DPTH 24 WNC-DIR 240 WW-CODE 40  
 LON 46-198W HR 01.6 W-COLOR WND-SPC 19 CLD-TPE 7  
 MARSD SQ 149 C/I 1810 W-TRNSP BARO 1020.0 CLC-AMT 8 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	PO4 -P-	NO2	NO3	SIO	PH
015	0000	1460	36038		2688	15074				035	
015	0050	1446	36022	557	2690	15078				031	
015	0098	1437	36023	556	2692	15082				036	
015	0148	1436	36026	554	2692	15090				032	
015	0197	1431	36011	546	2692	15097				032	
015	0246	1416	35976	557	2692	15099				035	
015	0295	1347	35817	530	2695	15083				043	
015	0392	1088	35343	374	2708	15004				112	
015	0489	0888	35181	381	2730	14945				138	
015	0585	0746	35093	412	2745	14906				148	
015	0682	0651	35062	466	2756	14884				143	
015	0778	0501	34927	555	2764	14838				126	
015	0876	0489	34977	567	2769	14850				126	
015	0975	0458	34976	593	2773	14854				120	
015	1181	0450	35021	595	2777	14885				126	
030	1419	0388	34948	626	2778	14899				123	
030	1908	0359	34937	633	2780	14969				133	
030	2402	0331	34945	629	2783	15041				151	
030	2901	0294	34935	628	2786	15111				184	
030	3403	0254	34920	628	2788	15181				226	
030	3702	0237	34909	633	2789	15226				226	
030	4001	0226	34904	641	2790	15274				228	
030	4198	0223		645						205	
030	4393	0221	34905	650	2790	15341				181	

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1460	36038	554 C	2688	15074	0000	00000	1183
0010	1457	36035		2688	15074	0012	00001	1182
0020	1453	36031		2689	15075	0024	00002	1181
*0030	1450	36029		2689	15076	0036	00005	1179
0050	1446	36022	557	2690	15078	0059	00015	1181
0075	1441	36021	557	2691	15080	0089	00034	1178
0100	1437	36023	556	2692	15083	0119	00061	1177
0125	1436	36026	555	2692	15087	0149	00095	1181
0150	1436	36026	554	2692	15091	0178	00138	1188
0175	1434	36020	549	2692	15094	0208	00188	1196
0200	1431	36011	547	2692	15097	0239	00246	1204
0225	1426	36000 B	553	2692	15100	0269	00312	1209

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
C250	1412	35966	556	2693	15099	0300	00387	1212
C300	1335	3579 B	522 B	2695	15079	0360	00558	1197
0400	1069	35322	371	2710	14999	0475	00966	1066
C500	0869	35168	383	2732	14940	0572	01411	0864
C600	0732	35090	418	2747	14903	0652	01862	0728
C700	0620 C	3503 C	484 B	2757	14875	0721	02317	0625
0800	0493 B	3493 B	561 B	2765	14838	0780	02771	0544
1000	0456	34982	595	2773	14857	0884	03728	0483
1200	0446	35017	597	2777	14887	0980	04814	0465
1500	0379 B	3494 B	630	2778	14908	1121	06776	0463
2000	0354	34938	633	2781	14982	1358	11066	0471
2500	0324	34944	629	2784	15055	1596	16584	0462
3000	C286	34932	628	2787	15125	1828	23158	0445
3500	C248	34916	629	2789	15196	2050	30639	0426
4000	C226	34904	641	2790	15274	2268	39083	0422

C-REF-NO 002 YR 1966 DEPTH 4070 WAVES 1 2524 AIR T 14.2 VIS 7  
 CONS. NO 041 MONTH 5 MXSAMPC 40 WAVES 2 49XX WET B 13.8 STN  
 LAT 41-486N DAY C3 NC.DPTH 23 WNC-DIR 250 WW-CODE 51  
 LON 47-012W HR 07.3 W-COLOR WNC-SPC 14 CLD-TPE 7  
 MARSD SQ 149 C/I 1810 W-TRASP BARO 1018.0 CLD-AMT 8 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	PO4	-P-	NO2	NO3	SIO	PH
073	0000	1420	36082		2700	15062					062	
073	0049	1436	36041	557	2693	15074					032	
073	0096	1433	36036	558	2693	15081					035	
073	0144	1433	36036	558	2693	15089					033	
073	0192	1434	36031	559	2693	15097					032	
073	0239	1404	35964	543	2694	15094					036	
073	0286	1395	35944	541	2694	15099					038	
073	0380	1293	35724	510	2699	15078					052	
073	0473	1076	35373	388	2713	15014					110	
073	0567	0837	35107	373	2732	14938					155	
073	0660	0641	34974	447	2750	14876					155	
073	0755	0574	35021	504	2762	14865					142	
073	0851	0470	34933	577	2768	14837					126	
073	0949	0488	35016	572	2772	14862					129	
073	1153	0439	34992	604	2776	14876					124	
088	1450	0376	34930	639	2778	14898					118	
088	1916	0361	34939	635	2780	14971					131	
088	2396	0335	34951	628	2783	15042					157	
088	2888	0297	34936	630	2786	15110					180	
088	3384	0257	34921	645	2788	15179					185	
088	3580	0240	34907	645	2789	15206					211	
088	3774	0228	34909	648	2790	15235					211	
088	3964	0219	34909	650	2790	15265					183	

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1420	36082	556 C	2700	15062	0000	00000	1069
0010	1423	36073		2698	15064	0011	00001	1085
0020	1426	36065		2697	15067	0022	00002	1100
*0030	1429	36057		2696	15069	0033	00005	1114
0050	1436	36041	557	2693	15075	0056	00015	1147
0075	1435	36036	557	2693	15078	0085	00033	1157
0100	1433	36036	558	2693	15082	0114	00059	1159
0125	1433	36036	558	2693	15086	0143	00093	1166
0150	1434	36037	559	2693	15090	0173	00135	1176
0175	1435	36037	560	2693	15095	0203	00185	1186
0200	1429	36020	556	2693	15097	0233	00242	1193
0225	1413	3599 B	548	2694	15095	0263	00308	1194
0250	1402	35960	542	2694	15095	0293	00382	1196



DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0300	1387	35923	540	2694	15098	0353	00553	1207
0400	1252 B	3565 B	483 C	2701	15066	0473	00982	1164
0500	1006	35285	373	2718	14992	0582	01485	1005
0600	0758 B	35042	395 B	2739	14912	0674	01996	0802
0700	0607 D	3499 D	471	2756	14869	0747	02478	0639
0800	0520 C	3498 D	542 B	2766	14850	0807	02938	0546
1000	0481 B	3502 C	578	2774	14868	0911	03898	0485
1200	0427	34982	611	2776	14879	1007	04989	0467
1500	0372	34928	640	2778	14905	1149	06955	0463
2000	0357	34942	634	2781	14984	1386	11255	0473
2500	0328	34949	628	2784	15057	1625	16790	0463
3000	0288	34934	634	2786	15126	1858	23395	0448
3500	0247	34912	645	2788	15195	2081	30909	0427

C-REF-NO 002 YR 1966 DEPTH 3705 WAVES 1 3022 AIR T 09.0 VIS 7  
 CONS. NO 042 MONTH 5 MXSAMPD 37 WAVES 2 2134 WET B 09.0 STN  
 LAT 42-030N DAY 03 NO.DPTH 22 WND-DIR 340 WW-CODE 60  
 LON 47-425W HR 12.5 W-COLOR WND-SPD 06 CLD-TPE 7  
 MARSC SQ 149 C/I 1810 W-TRANSP BARO 1022.0 CLD-AMT 8 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	PO4	-P-	NO2	NO3	SIO	PH
125	0000	1190	35378		2692	14976					048	
125	0049	1164	35371	594	2696	14975					045	
125	0097	1102	35244	600	2698	14959					056	
125	0146	1044	35138	581	2700	14945					063	
125	0194	1091	35337	411	2707	14973					098	
125	0241	0999	35205	380	2713	14946					126	
125	0289	0919	35154	360	2723	14924					145	
125	0384	0726	35021	406	2742	14864					157	
125	0478	0550	34914	509	2757	14808					142	
125	0572	0470	34907	577	2766	14791					123	
125	0668	0445	34913	599	2769	14796					120	
125	0764	0439	34928	603	2771	14810					120	
125	0860	0422	34930	619	2773	14819					117	
125	0958	0405	34928	629	2775	14828					113	
125	1156	0383	34921	645	2776	14852					117	
138	1499	0375	34934	640	2778	14906					125	
138	1973	0356	34954	631	2782	14979					111	
138	2458	0317	34928	638	2783	15045					148	
138	2956	0279	34931	646	2787	15114					150	
138	3262	0258	34922	651	2788	15158					170	
138	3468	0240	34915	655	2789	15187					173	
138	3676	0225	34910	654	2790	15217					170	

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
C000	1190	35378	476 I	2692	14976	CCCC	000C0	1143
C010	1185	3538 B		2693	14976	0011	00001	1137
C020	1178	3537 C		2694	14975	0023	00002	1132
*0030	1172 B	3537 D		2694	14974	0034	00005	1127
C050	1163	35369	595	2696	14975	0057	00015	1113
C075	1132	3531 B	620 E	2697	14967	0085	00032	1110
C100	1097	35233	601	2698	14958	0113	00058	1109
0125	1062 B	3516 D	600 C	2699	14949	0141	00090	1106
C150	1049 B	3516 C	567 B	2701	14948	0168	00129	1095
C175	1075 E	3526 I	479 F	2704	14963	0196	00174	1068
C200	1083 B	3533 C	403	2708	14971	0222	00226	1039
C225	1037 C	3526 E	382 B	2711	14958	0248	00282	1013
C250	0984	35193	375	2715	14942	0273	00343	0981
C300	0897	35139	361	2725	14917	0320	00476	0890

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0400	0692	34998	423	2745	14853	0401	00761	0706
0500	0525	34907	529	2759	14801	0465	01055	0567
0600	0459	34908	587	2767	14791	0519	01358	0498
0700	0443	34918	601	2770	14801	0569	01688	0482
0800	0433	34930	609	2772	14814	0617	02061	0472
1000	0399	34926	633	2775	14833	0711	02926	0453
1200	0381	34922	646	2777	14859	0802	03966	0452
1500	0375	34934	640	2778	14907	0941	05903	0462
2000	0354	34953	631	2782	14983	1176	10135	0461
2500	0314	34928	639	2784	15051	1410	15573	0458
3000	0276	34930	647	2787	15121	1637	22021	0433
3500	0239	34915	654	2789	15192	1853	29277	0412

C-REF-NO 002	YR 1966	DEPTH 3265	WAVES 1 3522	AIR T 05.5	VIS 8
CONS. NO 043	MONTH 5	MXSAMPD 32	WAVES 2 3034	WET B 04.5	STN
LAT 42-196N	DAY 03	NC.DPTH 21	WND-DIR 350	WW-CODE 60	
LON 48-24CW	HR 17.3	W-COLOR	WNC-SPD 08	CLD-TPE 7	
MARSD SQ 149	C/I 1810	W-TRANSP	BARO 1024.6	CLD-AMT 8	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	PO4 -P-	NO2	NO3	SIO	PH
172	0000	0670	34216		2686	14768				C19	
172	0050	0551	34233	712	2703	14729				070	
172	0099	0505	34235	693	2709	14718				084	
172	0149	0484	34476	640	2730	14721				098	
172	0199	0486	34712	584	2748	14733				111	
172	0248	0474	34799	588	2757	14738				114	
172	0298	0424	34775	640	2760	14725				106	
172	0397	0478	34938	569	2767	14766				127	
172	0495	0439	34943	601	2772	14766				120	
172	0594	0437	34963	599	2774	14782				125	
172	0692	0420	34962	614	2776	14791				123	
172	0790	0405	34947	624	2776	14800				120	
172	0888	0402	34949	626	2777	14816				120	
172	0986	0391	34945	634	2777	14827				120	
172	1189	0373	34931	650	2778	14853				120	
181	1447	0353	34923	654	2779	14888				117	
181	1932	0335	34939	642	2782	14963				133	
181	2424	0300	34936	646	2786	15032				145	
181	2820	0270	34927	652	2788	15087				158	
181	3019	0252	34922	653	2789	15114				161	
181	3215	0227	34914	654	2790	15137				172	

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0670	34216	718 D	2686	14768	0000	00000	1196
0010	0644	3420 C		2689	14759	0012	00001	1175
0020	0619 B	3419 E		2691	14751	0024	00002	1153
*0030	0597 B	3419 G		2694	14744	0035	00005	1131
0050	0551	34233	712	2703	14729	0057	00014	1045
0075	0522	3422 C	702	2705	14721	0083	00031	1024
0100	0504	34239	692	2709	14718	0109	00054	0994
0125	0491	3435 C	668	2719	14718	0133	00081	0902
0150	0484	34481	639	2730	14721	0154	00111	0795
0175	0485	3461 B	607 B	2740	14727	0173	00143	0704
0200	0486	34715	584	2749	14733	0190	00175	0628
0225	0483	34774	580	2754	14737	0205	00208	0584
0250	0472	34798	590	2757	14737	0219	00243	0556
0300	0425	34778	639	2760	14725	0246	00320	0524
0400	0477	34939	569	2767	14766	0297	00500	0474

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0500	0439	34944	601	2772	14766	0343	00712	0437
0600	0436	34963	600	2774	14782	0387	00960	0430
0700	0419	34961	615	2776	14791	0430	01248	0422
0800	0405	34947	624	2776	14802	0473	01578	0425
1000	0390	34944	635	2777	14829	0559	02379	0428
1200	0372	34930	650	2778	14855	0646	03371	0435
1500	0351	34924	653	2780	14896	0779	05220	0438
2000	0331	34939	642	2783	14973	1002	09241	0439
2500	0295	34935	647	2786	15043	1222	14352	0426
3000	0254	34923	653	2789	15112	1434	20367	0405



C-REF-NO 002	YR 1966	DEPTH 2500	WAVES 1 3522	AIR T 04.5	VIS 8
CONS. NO 044	MONTH 5	MXSAMPD 25	WAVES 2 4934	WET B 04.0	STN
LAT 42-355N	DAY 03	NO.DPTH 19	WND-DIR 360	WW-CODE 60	
LON 49-073W	HR 21.8	W-COLOR	WND-SPD 07	CLD-TPE 7	
MARSD SQ 149	C/I 1810	W-TRNSP	BARO 1026.8	CLD-AMT 8	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	PO4 -P-	NO2	NO3	SIO	PH
218	0000	0670	34364		2698	14770				075	
218	0050	0584	34401	702	2712	14745				079	
218	0100	0558	34497	693	2723	14744				101	
218	0150	0498	34720	572	2748	14730				120	
218	0200	0552	34911	503	2756	14763				142	
218	0251	0516	34931	555	2762	14757				130	
218	0301	0484	34926	562	2766	14752				132	
218	0402	0458	34954	588	2771	14758				126	
218	0503	0416	34918	624	2773	14757				117	
218	0603	0406	34925	630	2774	14770				117	
218	0703	0400	34938	629	2776	14784				119	
218	0803	0386	34927	645	2776	14794				117	
218	0900	0382	34931	642	2777	14809				117	
228	0959	0377	34931	649	2778	14817				119	
228	1155	0353	34912	666	2779	14839				114	
228	1455	0350	34921	655	2780	14888				121	
228	1968	0325	34931	646	2783	14964				137	
228	2277	0307	34931	643	2785	15010				151	
228	2479	0296	34933	645	2786	15039				155	

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0670	34364	708 I	2698	14770	0000	00000	1086
0010	0655 B	34362		2700	14766	0011	00001	1070
0020	0640 C	34363		2702	14762	0022	00002	1052
*0030	0626 D	3437 B		2704	14758	0032	00005	1032
0050	0584	34401	702	2712	14745	0052	00013	0959
0075	0569 B	34437	688 F	2717	14743	0076	00028	0917
0100	0558	34497	693	2723	14744	0098	00048	0862
0125	0523 C	3460 B	636 D	2735	14735	0118	00071	0746
0150	0498	34720	572	2748	14730	0136	00096	0632
0175	0523 D	3483 B	527 B	2753	14746	0151	00121	0584
0200	0552	34911	503	2756	14763	0166	00149	0559
0225	0540 B	3493 B	524 D	2760	14763	0179	00179	0531
0250	0517	34932	554	2762	14757	0192	00211	0509
0300	0485	34926	562	2766	14752	0217	00281	0481
0400	0458	34954	587	2771	14758	0264	00448	0441
0500	0417	34919	623	2773	14757	0308	00652	0431
0600	0406	34924	630	2774	14769	0351	00896	0424

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0700	0400	34938	629	2776	14783	0394	01180	0417
0800	0386	34927	645	2776	14794	0436	01507	0418
1000	0372	34927	654	2778	14821	0521	02293	0419
1200	0352	34912	666	2779	14846	0606	03261	0423
1500	0348	34922	654	2780	14895	0737	05084	0436
2000	0323	34931	645	2783	14969	0958	09078	0435

C-REF-NO 002	YR 1966	DEPTH 1330	WAVES 1 3522	AIR T 03.7	VIS 8
CONS. NO 045	MONTH 5	MXSAMPC 13	WAVES 2 49XX	WET B 03.1	STN
LAT 42-485N	DAY C4	NC.DPTH 15	WNC-DIR 270	WW-CODE 01	
LON 49-418W	HR 02.3	W-COLOR	WND-SPC 04	CLD-TPE 7	
MARSC SQ 149	C/I 1810	W-TRANSP	BARO 1027.8	CLD-AMT 6	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	PO4 -P-	NO2	NO3	SIO	PH
023	0000	0310	33821		2696	14614				042	
023	0050	0259	33974	768	2712	14603				077	
023	0100	0251	34116	749	2724	14609				102	
023	0150	0279	34259	738	2733	14632				102	
023	0200	0313	34381	726	2740	14656				104	
023	0250	0315	34417	726	2743	14666				103	
023	0300	0317	34439	718	2744	14675				107	
023	0400	0320	34542	702	2752	14694				108	
023	0501	0381	34746	695	2763	14740				097	
023	0601	0394	34833	676	2768	14763				095	
023	0701	0395	34854	667	2770	14780				105	
023	0801	0394	34869	665	2771	14797				109	
023	0900	0388	34887	660	2773	14811				111	
023	1101	0381	34896	656	2774	14842				114	
023	1299	0367	34905	660	2777	14869				114	

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0310	33821	789 C	2696	14614	0000	00000	1107
0010	0297	33852		2699	14611	0011	00001	1073
0020	0285	33882		2703	14608	0022	00002	1041
*0030	0275	33912		2706	14606	0032	00005	1010
0050	0259	33974	768	2712	14603	0052	00013	0951
0075	0250	34046	759	2719	14604	0075	00028	0891
0100	0251	34116	749	2724	14609	0097	00047	0840
0125	0262	34189	743	2729	14619	0117	00071	0796
0150	0279	34259	738	2733	14632	0137	00099	0759
0175	0298	34327	731	2737	14645	0156	00130	0726
0200	0313	34381	726	2740	14656	0174	00164	0701
0225	0316	34405	726	2742	14662	0191	00203	0687
0250	0315	34417	726	2743	14666	0208	00245	0679
0300	0317	34439	718	2744	14675	0242	00341	0668
0400	0320	34542	702	2752	14694	0306	00569	0601
0500	0380	34744	695	2762	14739	0363	00830	0521
0600	0394	34833	676	2768	14763	0414	01114	0479
0700	0395	34854	667	2770	14780	0462	01436	0474
0800	0394	34869	665	2771	14797	0510	01805	0471
1000	0385	34894	657	2774	14826	0604	02676	0459
1200	0373	34905	657	2776	14855	0696	03725	0455

C-REF-NO 002 YR 1966 DEPTH 70 WAVES 1 XX AIR T 03.8 VIS 8  
 CONS. NO 046 MONTH 5 MXSAMPC 01 WAVES 2 XX WET B 03.4 STN  
 LAT 43-028N DAY C4 NO.DPTH 6 WND-DIR 990 WW-CODE 01  
 LON 50-172W HR 05.4 W-COLOR WND-SPD 01 CLD-TPE  
 MARSD SQ 150 C/I 1810 W-TRANSP BARO 1030.0 CLD-AMT HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	PO4	→P-	NO2	NO3	SIO	PH
054	0000	0340	33543		2671	14623					018	
054	0010	0270	33621	902	2683	14596					024	
054	0021	0243	33707	831	2692	14587					049	
054	0030	0249	33829	809	2702	14593					064	
054	0050	0253	33917	780	2708	14599					079	
054	0071	0249	34049	740	2719	14603					104	

‡DEPTH OF BOTTOM OBSERVATION GREATER THAN SOUNDING

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0340	33543	982 D	2671	14623	0000	00000	1343
0010	0270	33621	902	2683	14596	0013	00001	1225
0020	0244	33698	842 B	2692	14587	0025	00002	1146
0030	0249	33829	809	2702	14593	0036	00005	1052
0050	0253	33917	780	2708	14599	0057	00014	0989

C-REF-NO 002	YR 1966	DEPTH 1800	WAVES 1	XX	AIR T 08.6	VIS 8
CONS. NO 047	MONTH 5	MXSAMPC 04	WAVES 2	XX	WET B 06.9	STN
LAT 43-28CN	DAY C4	NO.DPTH 19	WND-DIR 120		WW-CODE 02	
LON 53-405W	HR 17.3	W-COLOR	WNC-SPC 10		CLD-TPE 5	
MARSC SQ 150	C/I 1810	W-TRANSP	BARO 1027.9		CLD-AMT 1	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	PO4	-P-	NO2	NO3	SIO	PH
173	0000	C570										
173	0001	C559	33682		2658	14717					C13	
173	0020	C531	33885		2678	14711					016	
173	0040	C493	33913		2684	14699					024	
173	0060	C478	34071		2699	14699					063	
173	0079	C441	34198		2713	14688					089	
173	0099	C385	34238		2722	14668					100	
173	0120	C379	34375		2733	14671					109	
173	0140	C403	34498		2741	14686					116	
173	0161	C460	34624		2744	14715					124	
173	0181	C502	34745		2749	14737					136	
173	0201	C492	34759		2751	14737					132	
173	C231	C516	34849		2756	14753					140	
173	C263	C501	34862		2759	14752					136	
173	C293	C482	34872		2762	14749					130	
173	C323	C468	34871		2763	14748					130	
173	C353	C454	34878		2765	14748					117	
173	C381	C478	34930		2767	14763					133	
173	0410	C439	34884		2767	14751					119	

#TIME-DISTANCE CHECK FAILED

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
C000	C570	33673		2656	14721	0000	00000	1480
C010	C542	3376 G		2666	14713	0014	00001	1387
C020	C531	33885		2678	14711	0028	00003	1280
C030	C511	3390 E		2682	14705	0041	00006	1245
C050	C486	3399 B		2691	14699	0065	00016	1158
C075	C450	34176		2710	14691	0092	00033	0980
C100	C384	34244		2722	14668	0115	00054	0864
C125	C382	34406		2735	14674	0135	00077	0742
C150	C429	34558		2743	14699	0153	00102	0678
C175	C493	3471 B		2748	14732	0170	00129	0634
C200	C493	34759		2751	14737	0185	00159	0603
C225	C511	3483 B		2755	14749	0200	00192	0573
C250	C510	34862		2758	14754	0214	00226	0552
C300	C479	34872		2762	14749	0241	00302	0514
0400	C448 C	3490 C		2767	14753	0291	00481	0474



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